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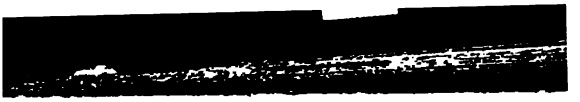
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HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES.

JANUARY—JUNE,

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THE

HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES:

BEING

A PRACTICAL AND ANALYTICAL DIGEST OF THE CONTENTS OF THE PRINCIPAL BRITISH AND CONTINENTAL MEDICAL WORKS PUBLISHED IN THE PRECEDING SIX MONTHS:

TOGETHER WITH A

SERIES OF CRITICAL REPORTS ON THE PROGRESS OF MEDICINE AND THE COLLATERAL SCIENCES DURING THE SAME PERIOD.

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HALF-YEARLY ABSTRACT

OF

THE MEDICAL SCIENCES,

&c. &c.

PART I.

PRACTICAL MEDICINE, PATHOLOGY, & THERAPEUTICS.

SECT. I.—GENERAL QUESTIONS IN MEDICINE.

(A) HYGIENE.

ART. 1.—*On the transmission of Syphilis by vaccination.*
By M. RICORD.

(*The Medical Circular*, March 5, 1862.)

THE very interesting remarks which follow are from a clinical lecture delivered by M. Ricord, at the request of M. Trousseau, in the Hôtel Dieu, at Paris. They start from a case then in the hospital: they end with an opinion upon the notorious case at Rivolta, in which syphilis broke out in forty-six infants three weeks after vaccination.

A young woman, aged eighteen, was admitted on the 6th of December last into the wards of the Hôtel Dieu, for the treatment of catarrhal metritis and granulating ulceration of the cervix. *No syphilitic precedent whatever* could be traced in her history. An epidemic of smallpox having broken out while she was in the hospital, all the patients liable to contagion were repeatedly vaccinated. Although the girl presented unmistakeable marks of previous successful vaccination, she also underwent the operation. The lymph was supplied by a healthy infant, born in the wards, and vaccinated a few days before with the virus distributed at the Academy of Medicine; three punctures were made in each arm. Three children were

also inoculated with matter taken from the same infant, and in all four the pustules were developed in the most regular manner. In the young woman, on the contrary, the vaccine did not take; this was fully expected. She left the hospital, and was lost sight of for a fortnight, when she returned to the Hôtel Dieu, complaining of pain in one arm. On examination of the part two pustules of ecthyma were found occupying the seat of two punctures. These were at first referred to a somewhat tardy evolution of the vaccination, and perhaps to accidental friction. But the pustules, deemed insignificant at first, gradually became larger and hard at the base; cervical and axillary adenitis set in, and, after an interval of five or six weeks, a roseate eruption broke out over the entire body.

From the beginning, M. Trousseau strongly suspected the syphilitic nature of the symptoms, but he was desirous of obtaining the opinion of M. Ricord, who fully confirmed his conjecture.

It is an unquestionable fact, said this last-named physician, that this patient bears on her arm a most distinct primary sore, *an indurated and infecting chancre*, characterised by an indolent, convex tumour, ulcerated at the point (*ulcus elevatum*), suppurating moderately, and supported on a broad, elastic base, well limited at its margin, surrounded by uninflamed textures, and, as it were, implanted in the healthy tissues. The present tumour is a fair specimen of the infecting chancre in a state of transition towards the secondary stage, and assuming the aspect of the mucous papula. Consider, in addition, the other phenomena which have followed each other in rapid and regular succession, the glandular enlargements of the axilla and neck, the headache and roseola, and you cannot doubt but that the case before you is an unmistakeable instance of genuine secondary syphilis.

With regard to the origin of the disease, it is obvious that the punctures in the arm have been the portals through which it has entered the system; but it is by no means so clear that the poison was introduced into these wounds together with the vaccine-lymph.

M. Ricord does not reject this mode of propagation as absolutely impossible. But in the estimation of facts which seem to establish such transmission, it is necessary, said he, to distrust the evidence of our senses. It is only by taking into account the obscurity which must necessarily surround a pathogenic interpretation of an usually retrospective character, and carefully guarding against the errors that a superficial observation may give rise to, that we can hope to discover the solution of so important and intricate a problem. We have now entered, he continued, upon a period of reaction against hitherto accepted doctrines, and if we do not take care, we will be almost inclined to pronounce a man to be affected with syphilis if he has ventured, without an umbrella, in some of the less reputable streets of this capital. M. Ricord then treated of the contagiousness of constitutional syphilis, and ascribed it in most instances to the infectious character retained by chancres, *undergoing transformation* into secondary symptoms, or by *mucous papulæ*, the earliest manifestation of the general poisoning of the system, whether developed *in situ* by a metamorphic change of the primary sore, or at a distance from the seat occupied by the latter. However this may be, M. Ricord

contends that the instances of propagation of syphilis by the contagion of secondary symptoms, are far more unfrequent than some authors have asserted. Syphilis is widely diffused, and were the contagion of its constitutional manifestations as easy as has been affirmed, the nineteeth century would far out-rival the fifteenth.

There may be perhaps some other vehicles of contagion besides the secretion of chancre, and sometimes of a secondary sore; this at least is not impossible, but is not susceptible of peremptory demonstration in the present state of our knowledge. An erroneous and hasty interpretation of obscure facts, in which the true filiation of the symptoms has eluded detection, is, in M. Ricord's opinion, at the bottom of all the mistaken theories and wandering speculations propounded on the subject. Thus, some men may escape infection though they have communicated with a woman affected with chancre, and others may be poisoned by one who herself is sound. Such cases are, of course, not obviously intelligible at first, but the obscurity is easily cleared away by the now well-known history of *mediate contagion*, by which we are taught that healthy females, who after intercourse with diseased men are approached by persons in sound condition, may transmit from the former to the latter the virus, themselves escaping scatheless. M. Ricord here related several very curious instances which illustrate and confirm in the most distinct manner the doctrine so perspicuously laid down by M. Cullerier. On the other hand, it is unnecessary to expatiate on the innumerable modes of conveyance of the virus from one person to another. Every possible contact, every imaginable form of communication, may generate chancre. M. Ricord once attended a magistrate affected with indurated chancre of the eyelid, periauricular bubo, and secondary roseola. The organs of generation were perfectly sound, but the patient acknowledged that his hands had wandered into dangerous precincts, and that in rubbing his eyes he had inoculated the virus into the eyelid. Is it entirely impossible that something of the same kind may have happened in M. Trousseau's patient? She was lost sight of for a fortnight; the punctures in the arm induced some local uneasiness, which she doubtless endeavoured to allay by scratching with her hand. Now, who will say that that hand has constantly remained pure, or that the arm may not have been exposed to any other suspicious contact? These are some of the points which ought to be cleared up before vaccination can, with any show of reason, be assumed to have caused the chancres observed in this instance.

The possible transmission of syphilis by the inoculation of the blood of persons tainted with the virus has, however, been for some time before the public, and derives considerable additional importance from the results recorded by M. Viennois. In this memoir the author agrees with M. Rollet, that syphilis is not transmitted by vaccine-lymph, but by the admixture of the latter with blood. In a recent vaccination, which caused considerable sensation beyond the Alps, it has likewise been contended, in order to account for the propagation of syphilis, that blood oozed out, together with lymph, from the pustules of the child who supplied the matter, and that the lancet of the operator was therefore charged with a mixed fluid of deleterious nature.

M. Ricord, while admitting the truth of these facts, rejects the interpretation which has been offered.

It is a remarkable circumstance, said he, that as soon as the generating poison of syphilis has penetrated into the system, it is fundamentally modified. It becomes undiscoverable to chemical analysis, or to microscopic research, and utterly loses its distinguishing character of reproducing a pustule similar to that in which it was originally generated. Were it otherwise, in a person tainted with syphilis, the most trifling wound would be liable to assume the aspect of chancre, from contact with the blood escaping from the lacerated vessels. Nothing of the kind is ever observed. M. Ricord has performed operations on many individuals suffering from constitutional syphilis, and he never noticed, even in a single instance, anything particular in the aspect, progress, or duration of the wounds.

It will, perhaps, be alleged, that experiments have been instituted, which seem to point to the possibility of the transmission of syphilis by the blood of diseased subjects. Thus, M. Waller, after scarifying the thigh of a patient, dressed the wounds with lint impregnated with syphilitic blood; the part healed, but about three weeks afterwards pustules appeared on the thigh. The fact is true, says M. Ricord; but it is proper also to add, that *at the same time* a similar pustule was developed on the shoulder. This chancre had, doubtless, the same origin as the others, and entirely invalidates the case. At Lyons, analogous experiments yielded conflicting results. Finally, M. Lalagade, the head surgeon of the Hospital of Albi, who never had been affected with syphilis, *publicly* inoculated in his own arm the blood of three soldiers manifestly suffering from this complaint; and although, on each occasion, two wide and deep punctures were performed, the results were entirely negative.

As to those sad instances of vaccination published in Germany, in France, and in Italy, M. Ricord does not deny their accuracy; they assuredly deserve consideration, but cannot be received as conclusive in the question, until all their attendant circumstances have been minutely weighed, and the reciprocal operation of cause and effect has been carefully inquired into. M. Ricord declared that he gave his full approbation to the conclusions of a paper published in the 'Gazette Hebdomadaire' by M. Jaccoud, on the distressing occurrences observed during the course of the last year in the province of Acqui.

M. Jaccoud, after reminding his readers that at the end of the month of May, 1861, syphilis broke out, three weeks after vaccination, in forty-six infants at Rivalta, proceeds to state that an inquest was held as to the cause of the calamity; and that, despite the apparent clearness of the facts, the committee appointed to investigate the matter declined to pronounce on the alleged connection between syphilis and vaccination, and declared that, in order to form their judgment, further inquiry was necessary. He continues thus:

"These gentlemen were both prudent and wise. Before admitting that syphilis in this instance was transmitted with the vaccine matter, many difficulties and obscurities have to be cleared away; it would further be necessary to solve several important questions, which at

present it appears impossible to reply to. For our own part, an attentive perusal of the documents of the case has led us to the same conclusion as Dr. Albertetti, who exonerates from all blame the vaccinations in question. The events of Rivalta present to our view two conspicuous, but wholly distinct facts—viz., the vaccination of the infants, and the subsequent appearance of syphilis in certain of their number. It is granted that these two orders of facts occurred in succession, but for the present we are not prepared to go any further, and to argue, *post hoc ergo propter hoc;* the coincidence is obvious, not so the inference of causality. Whatever interpretation be adopted as to these facts, they convey a useful caution, and illustrate in an eloquent manner the necessity of taking into account the manifold elements in the ætiological history of vaccinal syphilis, and the extreme reserve required of the physician in cases of this description."

"This view," said M. Ricord, "is in such perfect harmony with mine, that I have nothing to add to M. Jaccoud's remarks. Let us admit, and carefully inquire into, these cases, and let us guard against any predetermined notions on the subject; but as to the interpretation offered, let it be received with an amount of hesitation and doubt, increased by the obvious fact, that if ever the transmission of syphilis with vaccine-lymph is clearly demonstrated, vaccination must be altogether discontinued, for, in the present state of science, we are in possession of no criterion which may permit the conscientious practitioner to assert that the lymph he inoculates is perfectly free from admixture with blood tainted by syphilis."

Art. 2.—*A résumé of the principal Epidemics in different parts of the world during* 1861. By Dr. McWilliam.

(*Proceedings of the Epidemiological Society*, *Lancet*, Nov. 30, 1861.)

No epidemics of any magnitude have occurred either in this country or on the Continent during the last twelve months. Cholera, which in 1860 and the early months of the present year was prevailing at St. Petersburg and other parts in the Gulf of Finland, ceased with the return of spring. The same disease also disappeared about the same time at Ceuta and other stations in the empire of Morocco. Typhus fever had raged to a disastrous extent in the beleaguered fortress of Gaeta, and afterwards amongst the Neapolitan and Sardinian troops at Naples. Typhus had also been prevalent to some extent, but in a mild form, in some of the rural districts of England. In the north-west provinces of India, cholera had swept over extensive tracts of country with appalling force. Preceded by a desolating famine, the pestilence found in the starving population an easy prey to its ravages; and even amongst the European soldiery the per-centage of deaths to attacks had been almost unprecedentedly great.

The West Indies, more especially the Island of Cuba, has been visited by yellow fever in the course of the year, with more than usual virulence. Several of Her Majesty's ships have been infected with yellow fever at Havannah; and merchant ships have not only suffered from the disease while in that port, but some of them lost

part of their crews in their passage thence to England and other parts of Europe. Yellow fever has been actually introduced into St. Nazaire, at the mouth of the Loire, in the month of September last, by a ship from the Havannah; and within the past week cases of the same disorder are reported on board of a ship at Bordeaux. These facts are highly important, and suggestive of the desirability of some authorised declaration of opinion, by a Society like the Epidemiological, as to the vexed question of the infectious or non-infectious character of this terrible malady, which has on several occasions of late years extended beyond its usually recognised limits, and attained elevations and latitudes long considered incapable of maintaining its existence.

Rear-Admiral Sir Alexander Milne, K.C.B., Commander-in-Chief on the West India and North American Station, who is fully alive to the infectious character of yellow fever, and duly appreciates the value of preventive measures, had issued an order, to the effect that the ships of the squadron under his command were, unless under urgent necessity, to avoid anchoring in ports where yellow fever was known to prevail, and were not to remain in close harbours for more than ten days at a time; and, moreover, that in the event of a ship being invaded by yellow fever, she was at once to proceed to the northward for change of climate.

Smallpox has continued to prevail in many parts of England, and in some districts, from the previous neglect of vaccination, has proved very fatal, more especially in the south-western counties, in parts of Derbyshire, and in Northamptonshire. The whole circumstances of the present epidemy of smallpox, which, since its commencement in 1857 has destroyed in England little short of 20,000 persons, had abundantly borne out the allegation as to the neglect and imperfection of vaccination made by the Smallpox and Vaccination Committee of the Epidemiological Society, in their report of 1853, and memorial of 1855.

Late accounts stated that the epizootic disease, known as "steppe murrain" or "pestis boum," has been making great ravages in the western provinces of Russia. Pleuro-pneumonia had also prevailed in the early part of the year amongst the cattle in the colony of Victoria, Australia, and measures have been taken against its introduction into the adjacent colony of New South Wales. An epizooty amongst the hogs of Providence, Rhode Island, has also proved fatal.

Art. 3.—*On a new form of instrument for Vaccinating.* By Mr. Samuel Spratly.

(*Medical Times and Gazette*, Nov. 3, 1860.)

"The operation of vaccination, though one of exceeding simplicity, has frequently failed, not so much from the imperfection of the material employed, as from a want of attention on the part of the practitioner to the simplest points calculated to ensure its success.

"The most important of these, and one least attended to, is making the incision too deep, and causing thereby considerable flow of blood,

which prevents the inserted virus from being absorbed, and produces a good deal of pain to the little patient. Mr. Spratly thinks that these inconveniences might be avoided by an instrument so formed that the incision in the arm could be reduced to a minimum, and little more than a minute drop of blood follow its withdrawal from the wound.



Excavated upper surface.

"The instrument which is figured in the annexed drawing consists of a small lancet-point of triangular form, of about the twentieth of an inch in length, the upper surface being formed by the base of the triangle, and the under by the two sides and apex; the upper surface is carefully hollowed out both to the edge and point, and this serves for the reception of a moderate quantity of lymph. On the under surface is a small guard, which projects from each of the two sides of the triangle which form the under surface; this prevents the point entering the skin beyond a certain distance. It is mounted on a small steel stem, and inserted in an ivory handle, or may be made to fold up like an ordinary lancet, according to wish. When about to be used, the excavated upper surface is filled with lymph (either from a fresh vesicle or from some preserved in Dr. Husband's admirable capillary-tubes), and inserted diagonally beneath the skin; this forms a little valvular wound into which a minute drop of matter flows, and no more blood follows the operation than would be caused by puncturing the skin by a fine needle. Mr. Spratly has now used this instrument for more than five months, during which time he has vaccinated nearly 800 children, in each case by the directions of the National Vaccine Board. Four punctures are made in one arm of the child, and to vaccinate four children he has never found it necessary to charge the lancet more than once. To practitioners who vaccinate large numbers in the shortest possible time, this little instrument will be a great boon, as well as a great saving in lymph.

"Mr. Matthews, of Portugal Street, London, is the maker of this instrument, and has produced it in several neat and portable forms to suit the requirements of the practitioner."

ART. 4.—*On the influence of Impure Water in the production of Disease.* By Dr. R. DUNDAS THOMPSON, Medical officer of Health for St. Marylebone.

(*London Medical Review*, Dec., 1861.)

After giving many instances from his own experience in which the use of impure water had been a prime cause in producing disease, Dr. Thompson gives one which occurred in 1854. "I found," says he, "that the Southwark Company's water was of a different composition from the water of the Lambeth Company. When I applied a

piece of muslin over the supply pipe of the Southwark Company to the cistern in my laboratory at St. Thomas's Hospital, a large quantity of human excrement was detained, and the impurity in solution was much greater in the Southwark Company than in the Lambeth water, which contained little or no matter in mechanical suspension. The Lambeth water was obtained from Hampton, while that of the Southwark Company was pumped up from the river near Vauxhall Bridge. These two companies possessed mains in the same streets, and supplied the houses indiscriminately. Analysis alone enabled me to detect the two waters, as the inhabitants, without consulting their water receipts, were unable to state the source of their supply. And although the population supplied by the two companies was precisely in the same condition, except as to water, the cholera deaths in the houses supplied by the Lambeth Company were 37 to every 10,000, and in those by the Southwark Company 130 to 10,000, or as one to three and a half. I conclude from the data supplied that 2500 persons were destroyed by the Southwark water, who would have been saved if they could have obtained the Lambeth water. It is a remarkable fact, that the Lambeth water, in the epidemic of 1848-49 was more fatal in its effects than the Southwark, the Lambeth Company taking their water lower down the river at that time. The mortality in houses supplied by the Lambeth water was 125 in 10,000, while the deaths in houses supplied by the Southwark water were 118 in 10,000."

ART. 5.—*Is Shaving favorable to Health? A plea for Beards.* By Dr. A. MERCER ADAMS, late Physician to the Dumfries and Galloway Royal Infirmary.

(*Edinburgh Medical Journal*, Dec., 1861.)

Dr. Adams holds that shaving is neither warranted by antiquity, necessary for comfort, nor conducive to health; and his arguments have much to recommend them. He reminds us also that the prevalence of shaving in this and the last century originated in a miserable piece of sycophantism towards two French monarchs (Louis XIII and Louis XIV), who ascended the throne during their minority, the courtiers making their chins bare in compliment to their beardless princes, and that shaving, in fact, is nothing more than a perverse fashion. And, certainly, there is something to be said in favour of the hygienic virtues of the beard. For example—

"Now, independently of its ornamental qualities, as the badge of manly strength and beauty, the beard seems as truly designed by nature to aid in the preservation of the health as is the hair covering the cranium. The moustache is emphatically nature's simple respirator, while the hair covering the jaws and throat is intended to afford warmth and protection to the delicate structures in the vicinity, especially the fauces and the larynx. In shaving, then, do we not destroy the provisions which have been made for the maintenance of the health? We are only aware of one author who has directed special attention to this inquiry, and who has furnished us with any statistics

bearing on the subject. Dr. Szokalski has given us the details of his observations, made, in 1853, on fifty-three strong, healthy men, whose ages ranged from twenty-five to forty-five, who shaved the face, after having previously worn the whole beard. All of them at first experienced very unpleasant sensations of cold, but only fourteen of them became speedily accustomed to the change, and experienced no further inconvenience. The others suffered more or less, in various ways. Twenty-seven had painful affections of the teeth and jaws—eleven having toothache and facial neuralgia, and sixteen rheumatism of the gums, with and without abscesses. In six cases there was obstinate enlargement of the submaxillary glands; and in thirteen there was a rapid increase of the caries in previously affected teeth, requiring extraction of the aching grinders. He compared the statistics of toothache in thirty men, of the age of thirty years, one half of whom wore the beard, and the others shaved. Among those of the first class there had been only eight teeth extracted, while among the others there had been no less than twenty-six extractions. All the cases of dental neuralgia which came under his notice as the results of shaving, were obstinate and tedious in their character; in a few the disease assumed an intermittent type; and in two cases all remedies proved unavailing, until the beard had been allowed to grow once more. He is therefore firmly of opinion that the growth of the beard is conducive to health, and that shaving renders weakly persons more susceptible of violent alternations of temperature, and consequently more liable to disease. . . . . .

"The beard also acts beneficially as a respirator, for it not only mechanically prevents the entrance of foreign particles into the air-passages, but it also lessens the coldness of the air we breathe, by imparting to it, as it passes through the thick moustache, some of the heat which has been left there by the warm breath just expired. The utility of the beard, as a hygienic agent, was recognised many years ago by one of the wisest physicians and most benevolent men of modern times, the late Professor Alison, of Edinburgh. The stone-hewers in the neighbourhood of Edinburgh are known to be peculiarly short-lived—few of them reaching more than forty years—on account of the prevalence of phthisis, caused by their constantly breathing the fine siliceous particles which fill the air as they are working the free-stone. To prevent the inhalation of these irritating bodies, Dr. Alison recommended these stonemasons to allow the beard to grow on the upper lip. (The mason, as the reader may have observed, generally keeps his mouth closed in hewing stones, and breathes by the nostrils alone—in fact, we all breathe more by the nose than by the mouth.) The moustache, therefore, became very generally worn among that class of men, and was found very efficacious in arresting the fine dust, which must otherwise have entered the lungs.

"The beard and moustache began to be worn a few years ago—before the fashion became so universal—by railway guards, engine-drivers, &c., for similar reasons. These men are exposed to many vicissitudes of temperature, and are also constantly obliged to inspire air loaded with minute particles of dust, ashes, and carbonaceous matter. The beard is of great service to them, by rendering them

less susceptible of violent alternations of temperature, and by preventing the inhalation of the deleterious particles in the air. I have made many careful inquiries among the officials of the Great Northern Railway (and from being medical officer to the large body of *employés* in the works at Boston, and to the engine-drivers, &c., over a large portion of the line, I have had peculiar facilities for making such an investigation), as to whether the men who wore the beard enjoyed a greater immunity from disease than those who shaved. The result of all my inquiries and personal observations has been decidedly in favour of the beard as a protection to the health. Pulmonary and respiratory affections are comparatively rare among the bearded railway officials; and all those whom I questioned on the subject assured me that they found the beard an indescribable comfort, and were quite convinced of its protective virtues.

"By the courtesy of Mr. Seymour Clarke, the accomplished manager of the Great Northern Railway, I am able to give some official information respecting the influence of the beard on the health of the servants on that extensive line. Mr. Clarke informs me, in a letter dated 2nd November, that only sixteen enginemen and firemen shave the beard; that seventy-seven let the beard grow, and forty-two cultivate both the beard and moustache. 'The prevailing opinion among the men,' says Mr. Clarke, 'is, that *those who wear* the beard and moustache enjoy better health than those who shave.'"

Art. 6.—*On Coffee as an article in the diet of a soldier.* By M. Larrey.

(*Dublin Med. Press*, April 9 and 16, 1862.)

"A cabinet order, published in the Prussian 'Moniteur,' directs that the brandy served out in the Prussian army shall be henceforth replaced by coffee; and that each man shall receive two fifths of an ounce per day in time of peace, and half an ounce in time of war." These two sentences, headed *Coffee v. Brandy*, fill a corner of one of the pages of the 'Dublin Medical Press' for April the 16th. It would appear, also, from a quotation in the previous number of the same journal (a quotation taken from the 'Medical Times and Gazette'), that the French army authorities are becoming still more alive to the virtues of coffee—

"M. Larrey, having been called upon by the Council of Health of the Department of the Seine for his opinion as to the desirableness of an extensive employment of coffee in the soldier's diet, speaks in his reply in the warmest terms concerning its use. He states that, upon his father's recommendation, it was employed freely in Algeria, with the best effects upon the soldier's health, as a substitute for brandy. It has also seemed to act in some measure as a prophylactic to intermittent fever, and to counteract some of the ill effects resulting from the general use of *absinthe*. He disapproves, however, of the addition of chicory, the laxative properties of which tend to counteract the good effects of coffee as an article of military diet. One of the most incontestable effects of coffee is the neutralizing the debilitating in-

fluence of heat, for which, indeed, the Orientals regard it as a specific; thirst is thus appeased, and the pernicious consequences from drinking cold water during transpiration avoided. M. Larrey is disposed to attribute in some degree to the regular employment of coffee, the absence of epidemic disease during the Italian campaign of 1859. During long marches the soldier's spirits are quite as well raised by coffee as by brandy, while the effect is much less fugacious."

We trust it will not be long before our own army authorities take the hint which is here offered to them.

ART. 7.—*The effects of Diseased Food on Man.* By Dr. LETHEBY.

(*British Med. Journal*, March 29, 1862.)

In one of his reports on the sanitary condition of the City of London Dr. Letheby says:

"In 1860, a quantity of cow-beef was bought in Newgate Market by a sausage-maker at Kingsland, and made up into sausages in the usual way. The meat was not of first quality; for, as the sausage-maker observed, such meat never was. It was part of a cow that had been sent to the butcher from a London cow-house. Epizootic diseases were prevalent at that time in the cow-houses of London, and it was probable that the animal was affected with one of them. Of sixty-six persons who partook of the sausages made from it, sixty-four were attacked with symptoms of poisoning, and the severity of the symptoms was in direct proportion to the quantity eaten. In several cases, where one or two members of a family did not partake of the sausages, they alone escaped; and people far away from Kingsland, who had bought the sausages of a second dealer, suffered likewise. The effects were those of an animal poison; they were sickness, purging, giddiness, great prostration of the vital powers, intense irritation of the bowels, and in one case death. It was not an uncommon practice for butchers to dress for the market the bodies of animals that had not been slaughtered, but had died from accident or disease."

ART. 8.—*Poisoning from eating common Honey.*
By Dr. GEORGE BIDIE, Mysore Farm.

(*Madras Quart. Journ. of Med. Science*, Oct., 1861.)

"I lately got," says Dr. Bidie, "some honey, from the Coorg jungle, in the joint of a bamboo. It looked clear and wholesome, and had the usual smell and taste. It was placed on the breakfast-table, and on three successive mornings I partook of a little of it, about a teaspoonful on each occasion.

"On the second and third day I felt a disagreeable itching over the whole body, but, as the weather had suddenly become very cold, I thought the itching had in some way been caused by the change of temperature. On the night of the third day I awoke with intense headache, and a feeling of constriction about the forehead. The

headache did not permit of much sleep; so, getting up early, I took a long walk, in hopes that exercise might relieve me of the pain. It got worse, however, and returning to my quarters, I immediately went to bed and took a couple of purgative pills. I then had a feeling that some article of food had disagreed with me. Towards evening the headache left, but the constriction about the forehead remained. The itching had become worse, and I observed numerous red spots all over the body. On the fifth day I felt quite well, except that the itching was very troublesome. On the sixth I again took some of the honey at breakfast. Shortly afterwards I was purged, and my whole body became covered with an exanthematous eruption of prominent, irregular, red patches; most conspicuous on the face, back of the hands, and about the larger joints. The headache and constriction of forehead returned, and I suddenly became very sick, and felt so prostrated in strength that I could hardly walk a few yards to a couch. There was no desire to vomit, but a sickness and prostration so intense that I could hardly move a limb, or even speak. This condition lasted for about three hours. I then had a short sleep, and awoke to find the headache much relieved and the sickness quite gone. The eruption had partly disappeared. There were, however, intense thirst and a feeling of soreness in the throat, and my voice was quite hoarse. I may mention that, although accustomed to eat the honey of the English hive-bee, it never produced any such effects. When a school-boy, too, I have engaged in many a raid on the nests of the humble-bee, and consumed the honey in quantities that I should be afraid to mention now, without the slightest inconvenience. The eruption continued to appear and disappear and be troublesome for some time."

ART. 9.—*Poisoning from Diseased Grapes.* By —.

(*Pharmaceutical Journal*, Jan., 1862.)

A case is reported in the 'Echo Médical Suisse,' of a wet-nurse, 22 years of age, who, after partaking of some grapes which were infected with oidium, in a few hours suffered from severe gastralgia, great difficulty of breathing, vertigo, loss of memory, and delirium. She was restored to health by the administration of opiates internally, laxative injections, and the application of laudanum poultices to the stomach. For some days, however, she remained in a very weak condition, and her infant was attacked with a very violent and obstinate diarrhœa. The editor of the 'Répertoire de Pharmacie,' after narrating the above case, remarks that such grapes have been hitherto regarded as innocuous. This is the first instance, also, as far as we know, of any injurious consequences having arisen from eating grapes infected with oidium.

ART. 10.—*The influence of Railway Travelling on Public Health.* By the "LANCET COMMISSION."

(*Lancet*, Jan. 4, 11, 18, and 25; Feb. 1 and 8; and March 8, 1862.)

The concluding passages of this long and elaborate report will serve to show that the "Commission" is disposed to take an unfavorable view of the influence of railway travelling upon public health. Thus:

"The efficiency of the rapid concussions incidental to railway travelling in developing or aggravating epilepsy, chronic spasm, cerebral softening, and spinal softening, has been studied, not by the light of vague conjecture, but upon the authority of strictly observed cases in the practice of men such as Sir Ranald Martin, Dr. Brown-Séquard, Dr. Radcliffe, and others. The particular influence of cold and draught has been brought out prominently by Dr. Williams; while this has been placed in necessary juxtaposition with the exact inquiries as to ventilation and relative purity of the air in railway carriages, by Dr. Angus Smith. The mischief following from undue retention of the secretions is sufficiently and practically illustrated in the case by Mr. Hilton. The nature of the impressions so well studied by Sir David Brewster has been traced to its pathological consequences by Mr. White Cooper. Dr. Fuller's ingenious observations on the part played by the auditory nerve in conveying to the brain strong and incessantly repeated impressions of sound, are of a practical and suggestive character. This is, no doubt, one cause of the peculiar effects of continued railway travelling, which had not been well known, and of which the mischief is preventable. The almost certainty with which a long railway journey will, in some pregnant women, produce abortion, has been well illustrated in the communications by Dr. Meadows and Dr. Graily Hewitt. The acceleration of the pulse in railway travelling is one of the indications of the extent to which this form of passive exercise taxes the system; but all physiological deductions require to be received with great reservation, as the disturbing elements are so many and various.

"There are only two classes of persons especially likely to be injuriously affected by moderate railway journeys, even though frequent: they are persons advanced in life and of weakened power, and those who are subject to the special diseases which have already been studied in this relation. The actual exertion, the excitement, the mental strain, the peculiar influences of the motion of a railway carriage, indicate its dangers to those first mentioned. These constitute a small minority. But there are a number of persons who, although not far advanced in age, are yet the subjects of various conditions of ill health, depending on insidious degenerative disease of the brain and heart. The season-ticket holders of the railways are in large numbers men who have passed the best years of their life in hard and exhausting employment of mind and body. They are the successful merchants; the senior partners of flourishing firms, which they have built up by a life of labour; half-retired tradesmen; half-invalid bankers, *et id genus omne*. We can now see that it is by the injuries

which have resulted to these men from their constant travelling to and from town that an impression has become current as to certain mischiefs which habitual travelling inflicts. When it is stated that such a banker, who comes up fifty miles three or four times a week has to lie down half an hour before he can sign a cheque; that such a well-known chemist has suffered from symptoms of brain excitement since he bought his new house by the sea, and travelled daily to London; or that a certain barrister has found himself obliged to pay for his journey by epileptic seizures, the alarm soon extends beyond reasonable limits. But few men can endure without suffering to travel fifty or a hundred miles daily to their business for any length of time. The influence of the journey itself is heightened by many accessory conditions to which we have adverted; and the present construction of the rails and carriages is such as to deprive the traveller of all those mitigations by which his discomfort might be diminished and his health safe guarded.

"Amongst the unprecedented collection of cases brought under our notice during this inquiry, there have been recorded several of serious mischief, and even death, from persons in ill-health hurrying to catch trains, and sitting down heated and breathless, in the draught caused by the moving of the train which they have just managed to be in time for. It is almost exclusively at large termini that these cases have occurred, and that the cause of them obtains. Now, this rushing in at the last moment, we are informed, is becoming more frequent; and consideration of the condition in life of those who constitute the majority of season-ticket holders, would indicate how this evil arises. We believe it would be advantageous to public health and safety, however harsh it may at first appear, that the doors at termini should be closed five minutes previous to the departure of each train, so that sufficient time should be allowed for passengers to quietly settle themselves, and also for the officials, who are often (as one of them graphically expressed it) "torn to pieces" just at the last moment. It is well known that the difficulties with luggage, which this arrangement would obviate, are frequently causes of delay in starting trains. Then there is high speed to make up lost time, or want of punctuality, both of them fraught with danger to passengers.

"It has been shown that the injurious effects which habitual railway travelling produces on some who escape such influences when only taking occasional journeys, are very marked. In such persons, heedless continuance comes to be a cause of disease. In some, there have been no previous symptoms that they could recognise, or such as would have deterred them from undertaking the daily journey; and thus the season-ticket is taken, and has soon to be disused. In all cases the evidence points to the conclusion that the injurious influence slowly and gradually increases while the cause remains—that tolerance is not established by persistence.

"It is too much the custom, when adopting a country residence on a railway line, to make no arrangements of business according to the diminished time for work which the daily interval between the morning and evening trains allows. Hence that hurry, anxiety, and working of the brain at high pressure, which, of all things, tends to develop,

in susceptible persons, such injurious effects on health as habitual railway travellers often experience. But we believe that no person is justified in undertaking a series of continuous journeys by rail under the conditions alluded to (if under any circumstances), without previously consulting his medical attendant as to their probable effect on his health, the precautions he should adopt, and the warning symptoms which he may not safely disregard."

ART. 11.—*On the physical growth of the Recruit and young Soldier.* By Dr. WM. AITKIN, Prof. of Pathology in the Army Medical School at Fort Pitt, Chatham.

(*Medical Times and Gazette*, April 12 and 19, 1862.)

The following remarks, which occur in an introductory lecture, are of wider interest than they seem at first sight. They are indeed of great and general interest, for the points insisted upon are not so generally known as they ought to be. After giving a table, by Mr. J. W. Dawson, from the 'Statistical Society's Journal' for March, 1862, Dr. Aitkin proceeds:

"From this table you will see that a young man who has reached the average height at eighteen years of age may still be expected to grow fully two inches *before he is fully developed*, and of a bulk (supposing him to be 146 lbs. weight) sufficient to displace at least 150 lbs. of water = 2·604 cubic feet. Farmers and trainers of race-horses are all now beginning to understand the importance of attending to the due concurrence of age, weight, and development in the training of horses.

"Listen to the advice of an eminent professor of veterinary pathology (Varnell) on this important subject:—'As men of science, you ought to point out the folly caused, and the deterioration and suffering induced, by training and running horses at an age long before they arrive at maturity. Many are trained when not more than a year and a half old, and a large proportion of them are thereby lamed for life. Their joints become diseased, their ligaments and tendons strained, and their bones and the membranes covering them inflamed. In this condition they are placed in the hands of the veterinary surgeon, very often with a peremptory order to fire and blister the affected limbs. Instances are not unknown, where only one leg is affected, for a request to be made to fire the opposite one also, on the supposition that it would be strengthened by the operation. If the suggestion is acted on, the poor animal's legs are cauterized with the hot iron, and he is again handed over to the trainer. Such a horse might stand training, but in all probability he would break down the first race he ran.'

"So it may be with the young soldier; and let me point out to you the state of his bones under twenty years of age, and when they have still to grow for ten years before they are mature. There are portions on the ribs, where they join on to the spine (known to anatomists as epiphyses), which, at the age of eighteen, have only

commenced to grow from soft material into bone, and they are not completely turned into bone till the twentieth year of life. The ribs, therefore, are not fully grown till that age. Until this age, also, the shaft of the arm-bone still continues to increase in length; and so long as this growth continues, a portion of soft, vascular, and growing tissue intervenes between the shaft and the head of the bone. It is not till about the twentieth year of life that this soft substance is converted into bone, and the principal bone of the arm consolidated. The lower end of the chief bone of the forearm, to which the hand is fixed at the wrist-joint, is also at the age of eighteen still incomplete, and it, too, is finished about the twentieth year of life.

"About this time, also, the head of the thigh-bone unites to the shaft, and the end which forms the knee-joint becomes united to the shaft of the bone about this age, and also the lower ends of the tibia and fibula at the ankle-joint.

"Indeed, it is known, that a great deal of growth goes on in different parts of the skeleton, tending to the development and perfection of the human frame, which cannot be regarded as mature till that age. The age at which each bone is complete is very different with different bones, and I have merely noticed the events in the growth of the skeleton which take place between the eighteenth and twentieth years.

"But there are a great many very important bones still unfinished at the age of twenty, and which will not be consolidated till several years later. For example, the breast-bone still exists in several pieces. The heads of the leg-bones are still at twenty separated from their shafts by soft cartilage. The pieces of the back-bone have also separate plates not yet soldered to their bodies. The bones composing the haunches are still incomplete. They are surrounded by rims of soft cartilage, which do not become fixed or ossified to the bodies of the bone till between the twentieth and twenty-fifth years of life.

"Let me now for one moment fix your attention on the framework of the chest, for the organs contained in this cavity seem especially to suffer, as I have shown you; and, first of all, let me remark, that next to the inspiration of bad air, the imperfect or continuously obstructed expansion of the chest tends more than any other cause we know of to bring about diseases of the lungs and heart. The influence of pressure upon the chest, in the unfinished condition of its bones, is, therefore, of vital importance, and demands our consideration.

"As the twig or tree is bent, so it will grow. I have shown you that up till twenty years the ribs behind are still unfinished, soft at their joint-ends, where resistance and motion occur, and where they are still growing. The breast-bone in front is in a similar condition. It is obvious, therefore, that continued pressure upon these parts from before and from behind must exercise a material influence in fixing the future form of the chest. The cartilages of the ribs in front, and the breast-bone, ought to have full freedom to rise upwards and advance forwards at every inspiration, for thus the diameter of the chest from before and behind is naturally increased at every act of breathing. Any pressure on the chest, therefore, exerted between the front aspect and the back, when the bones are still growing, must

tend to set the further growth of the bones in an unnatural direction; for, in order to maintain the vital capacity of the lungs, the capacity of the chest-cavity from side to side must come to be increased, at the expense of the capacity in the other and normal direction. The capacity of the lungs goes on increasing with age, and height, and growth, so that men from five to six feet high inspire from 174 to 262 cubic inches in a progressively ascending scale.

"There is still another physiological consideration which demands our attention in the *physical growth* of the young soldier; it is the growth of the bones and muscles in relation to each other.

"From twenty to twenty-five, the bones become gradually thicker, the joints stronger, the shoulders broader, the muscles firmer and better developed.

"When you trace in young animals how this progressive growth is related to the muscles and the bones, you cannot fail to notice that the *development* and *growth* of the bones are in adaptation and fitness to the increasing power and actions of the muscles. The bones of the limbs become larger and stronger at their muscular attachments as the muscles become stronger and more active. This is shown, not only in relation to the growth of the bones adapting themselves to the growth of the muscles, but, if the muscles are paralysed, the bones waste as well as the muscles by a progressive wasting, and no amount of passive motion will prevent the occurrence of this atrophy, or retard it.

"Again, it has been shown by the accurate experiments of Forbes, formerly Professor of Natural Philosophy in the University of Edinburgh, that the muscles undergo a gradually steady and progressive development, as to strength, as the age of the individual increases after puberty up to thirty years. From the observations also of Quetelet and of Forbes, it is known that by exercise of a well-regulated kind a progressively greater amount of force can be got out of a man as his age increases, if his training is judiciously conducted, and his bodily condition maintained at the proper standard. According to Forbes—

Englishmen, at the age of 20 to 25, give a tractile force of	366—384
Scotchmen, ditto, ditto	374—404
Irishmen, ditto, ditto	397—413

"Looking, therefore, to the facts I have noticed regarding (1) age; (2) weight; (3) stature; (4) the development and growth of the skeleton, as recorded by the most laborious and prolonged observations of painstaking anatomists; (5) the vital capacity of the chest, as known by experiment; (6) the co-relation of the growth of muscle with bone; and, lastly, the progressive increase of muscular force with ages from twenty to twenty-five; I think, gentlemen, that I have given you sufficiently cogent physiological reasons for saying that the physical training of recruits demands great circumspection and care; and how it is best to be managed the professor of hygiene will, doubtless, explain to you. You can also appreciate the feelings of the first Napoleon, after the battle of Leipsic, when he said, 'I must have

grown men; *boys* serve only to fill the hospitals and encumber the road-sides.'"

ART. 12.—*On the Climate and Diseases of West Africa.* By Mr. R. CLARKE, late of Her Majesty's Colonial Medical Service, and formerly Acting Judicial Assessor of the Gold Coast.

(1. *Journal of Statistical Society*, March, 1856.)
(2. *Trans. of the Epidemiological Society*, 1860.)

The two papers now before us supply a good deal of information which is at once novel and valuable, more particularly with reference to the diseases and therapeutics of the natives. Mr. Clarke is of opinion—and his opinion is entitled to all respect, seeing that the data upon which it is formed are taken from the experience derived during a residence of twenty-three years in the colony of Sierra Leone and at the settlements of the Gold Coast—that the climate of West Africa has been made the scapegoat for a thousand sins on the part of the inhabitants, and that Europeans may hope to live as safely in this part of the world as anywhere else in the same latitude, if they will only live as they ought to live. Take the following passages as proof that the climate is not to blame for everything:

"The sanitary condition of the town of Cape Coast, and indeed of all the towns upon the seaboard, is deplorable; notwithstanding that some good has of late been effected by the municipality, yet, strange to relate, no public cloacinæ have as yet been provided to meet the wants of the people, although the subject has been repeatedly taken up, and just as suddenly dropped—the consequence being that decency is constantly outraged, and the most disgusting nuisances are openly committed in the streets. Foul stenches everywhere assail the nose and corrupt the air, dunghills being attached to the huts, where garbage, filth, stinking fish, and other abominations are thrown. The smells along the byepaths and beach in the neighbourhood of the towns and villages are most offensive from accumulations of human ordure and offal; in fact, the native population is unrestrained by any police rules except at Cape Coast and Accra. In both towns, the municipal corporation have enacted laws for their conservancy; but in reality they are a dead-letter, and hence an amount of nuisance scarcely credible. In the other towns, the Paynims, or native police, utterly neglect important matters of this kind. Indeed, the inhabitants of Cape Coast, and the other towns and villages, are chiefly indebted for their partial cleanliness to those useful scavengers, the Turkey buzzards, largely helped by packs of half-starved, mangy curs and ill-conditioned hogs, who greedily devour the excrementitious matters which are left to rot upon the streets. A ravine, evidently the bed of a dried-up stream, intersects the eastern portion of the town; the huts of the natives being built upon its banks, rise upwards to the slope above them. This vast surface-sewer is strewed over with animal and vegetable refuse in every stage of decay. It is perforated in a great part of its course by holes which the people dig for water. At the seaside, where it terminates, the surface-water is

dammed up by the sand thrown up by the surf on the shore, and is there collected into fetid pools. The thorough cleansing out and bridging over of this gully, at the most convenient points, would materially benefit the health and comfort of the inhabitants of Cape Coast. The municipalities of Cape Coast and Accra being at present without adequate means to effect sanitary improvements, progress in abating nuisances will be of slow growth if unaided by the local government.

"The town of Cape Coast is irregularly built; the houses are constructed of clay or bricks, and are generally square. In some of the rural districts they are made of bamboo, wattles being woven between the upright posts, which is then plastered over with clay, which becomes, when dry, remarkably hard. The walls of their dwellings are rarely if ever whitewashed, and are often crowded, ill-ventilated, and dirty. Most of the rooms are miserably small, dark, damp, and badly ventilated, especially those devoted to sleep. In their sleeping-places, the poorer classes, and many persons in better circumstances, keep all the dirty clothing not in wear either about their beds or hanging from the wall, scraps of food and putrid fish being strewed about or collected in corners. The lower rooms open into inner courts, where, in fine weather, the members of the several families meet, and where they often cook and eat their food. The houses of many of what may be termed the middling class are well provided with European articles of cabinet furniture, with crockery, glass, and mirrors, while the walls are decorated with cheap prints. Indeed, in many of the houses of the poor, their children paste over the walls with prints from illustrated journals, having quite a passion for this cheap kind of ornament. The wealthy native gentlemen live in well-built houses, commodiously and often elegantly furnished; but few of them have fireplaces either in the public rooms or bedrooms—a want which impairs health in a country exposed to heavy night-dews, and in some wet seasons to heavy falls of rain. The general custom on the Gold Coast is to burn charcoal in clay pots in the public rooms and bedrooms, when the weather is damp or cold. This practice is not without danger, as on one occasion I was called to render aid to a man whom I found had been asphyxiated by the fumes of charcoal to which he was exposed in a close sleeping-room. From inquiries that I have made, I found that twenty may be safely reckoned the average number of tenants living under one roof in the two-storied houses in Cape Coast; and it often happens that sober, decent people dwell in one apartment, and a drunken man in the next; for I regret to say that drunkenness is a wide-spread vice among the natives—a circumstance chiefly dependent upon the cheapness of the spirits imported from the United States and the Brazils. In these houses, the well-conducted are too often pestered and annoyed by their disorderly neighbours, and the most violent altercations frequently occur between the members of the different families."

And again:

"There are two badly situated graveyards in Cape Coast, both being in the windward part of the town, one of them being, moreover, surrounded by a dense population; and these cemeteries, from their

position, are very injurious to the health of the community. But besides these burial places, wherein Christians are alone interred, graves are at present allowed to be dug on the beach for certain of the pagan population, and slaves are buried without restriction to position along the pathways of the suburbs of the town. I recommended that these Christian burial grounds should be closed up, and that cemeteries should be opened to the leeward of the town, where there is abundance of land lying waste suitable for the purpose, where a piece of ground might also be set apart wherein to bury the dead of the pagan and slave population. The mass of the inhabitants bury their dead in the basement floor of their houses—a practice *not* confined to the pagan part of the population, but also practised by many respectable and wealthy families. This hurtful custom cannot be too soon discontinued. It is not done by the natives of the interior, but by all accounts it has been an ancient custom in the coast towns. When the deceased is wealthy, valuable articles, as gold ornaments, gold-dust, aggery-beads, &c., are placed in the coffin, and the body is sprinkled with gold-dust. These tombs in this way become family banks, and in the time of trouble the gold so deposited is applied to meet pressing claims or other family purposes. The practice of depositing articles of value with the dead is of very ancient origin, for King David had large treasure placed in his tomb by his son Solomon. I may here mention that several persons have been buried in the floor of the medical store of the Colonial Hospital, in the surgery, and in the kitchen used by the female prisoners. Suitable epitaphs are engraved on marble slabs which mark the spot where two of the dead rest."

Mr. Clarke also indicates several grave errors in eating and drinking which must greatly tend to increase the liability to disease, and which must be corrected before we are at liberty to throw unconditional blame upon the climate; and he explains the diminished mortality of late years by the greater attention which has been paid by Europeans to hygienic rules, and to the substitution of quinine for mercury in the treatment of paroxysmal fevers and other diseases.

In the pathological portion of the paper, among other points deserving attention, are these:—Parturition in the native woman has been generally represented as an easy and speedy process; but Mr. Clarke says: "my observation is quite opposed to this opinion, for they suffer as much during child-birth as the female of civilised countries, and unfortunate cases have happened where the woman has died undelivered. Instrumental assistance is as often required; and some of the worst cases of laceration of the perinæum, prolapsus uteri, and even laceration of the soft parts, to such an extent as to lay the vagina, bowel, and neck of the bladder into one common cloaca, fell under my notice."

The negroes also would seem to suffer more from fever than is generally supposed. "Sometimes," says Mr. Clarke, "they suffer a good deal from intermittent fever and continued fever with typhoid symptoms;" but he allows at the same time that not a single case of yellow or remittent fever occurred in a native, either in his own practice or in that of any one of his friends, and that the fever which did

occur was generally slight, the acute stage terminating in determination to the bowel or skin, and seldom lasting more than twenty-four hours. Dysentery and hepatitis are represented as the most fatal diseases, not only to Europeans, but also to natives. A liability to constipation, leading to a curious practice, is also mentioned, there being "crowds of persons, of both sexes, upon the beach at early morn, with various medicated decoctions, which they blow into the bowels from a bottle-shaped gourd, in order to obtain relief." A liability to a lethargy known as the "sleepy sickness" is another infliction of the natives. "The drowsiness is so overpowering, that the patient falls asleep even while eating. Young girls, in whom the catamenia has never appeared, or is suppressed, are frequently attacked with the disease. At Sierra Leone, I have known several instances of its being induced in youths of both sexes from smoking 'Diamba,' or Indian hemp." Another common defect among the natives is stammering; but, says Mr. Clarke, "stammering is affected by many among them, as it is considered *fashionable* to stammer." Hydrophobia, on the other hand, is not at all common. "During the whole period of my service in West Africa no instance of hydrophobia occurred, although hundreds of half-starved, mangy curs patrol the streets of the towns and villages on the Gold Coast and at Sierra Leone."

In addition to these matters, Mr. Clarke furnishes an interesting description of the topography of Sierra Leone and the Gold Coast, with an account of the productions and habits of the people; and with respect to the comparative merits of our three settlements, the Zambia, Sierra Leone, and the Gold Coast, he decides in favour of the latter.

(B) ACUTE DISEASES.

ART. 13.—*On the propagation of Typhoid Fever.* By Dr. W. BUDD, of Clifton, Senior Physician to the Bristol General Infirmary.

(*Pamphlet*, London, Richards, 1861, pp. 51.)

In this pamphlet, which is a reprint from the pages of the 'British Medical Journal,' Dr. Budd arrives at the following conclusions:

"1. That typhoid or intestinal fever is essentially contagious.

"2. That the living body of the infected man is the soil in which the poison breeds and multiplies.

"3. That the reproduction of the poison in the infected body, and the disturbance attaching to it, constitute the fever.

"4. That this reproduction is the same in kind as that of which we have, in smallpox, ocular demonstration.

"5. That the intestinal affection is the specific eruption of the fever, and is related to it in the same way in which the pustules on the skin in smallpox are related to that disease.

"6. That the exuviæ from the surface which is the seat of this eruption contain, as we should have expected, the most virulent part of the contagious principle.

"7. That, as a necessary result, sewers and the cloacæ which fill the

office of sewer, are the principle media for the transmission of the contagion; and, consequently, that in many instances the infected sewer, and not the infected man, appears as if it were the primary source of the specific poison.

"8. That, once cast off by the intestine, the contagious matter may communicate the fever to other persons in two principal ways—either by contaminating the drinking water; or, which is by far the more common case, by infecting the air."

Referring to Dr. Budd's views in his last report (1861) to the Privy Council, Mr. Simon says—

"The facts which Dr. Budd adduces from his own experience, and from that of other observers, are, in my opinion, sufficient to prove that the contagion of typhoid fever is importable by persons who have the disease. Indeed on this point Dr. Budd's history of the North Tawton fever and its offshoots is more conclusive than anything previously known to me. And his arguments are also, I think, cogent to this general effect—that specially the bowel-discharges of the disease are means (yet not therefore necessarily the sole means) by which a patient, whether migrating or stationary, can be instrumental in spreading the infection of typhoid fever. Provisionally these conclusions must be acted upon in their present unqualified form. But doubtless it is of practical importance to learn, as exactly as possible, whether it is in all states and under all circumstances, or only in certain states and under certain circumstances, that the bowel-discharges of typhoid fever can effect what is here imputed to them. Typhoid fever seems to be, in its causes, as in its nature, very intimately related to other diarrhœal affections."

ART. 14.—*A remark bearing upon the treatment of Fever.* By Dr. THOMAS K. CHAMBERS, Physician to St. Mary's Hospital, &c.

(*Medical Times and Gazette*, Nov. 25, 1861.)

"In the sequelæ of low fever," we quote from a clinical lecture on the renewal of life in continued fever, "more than in any other disease, the great difference between one patient and another, as respects their power of recovery, lies in their stomach. There is a little girl of four years old, now in Victoria Ward, who was admitted, on the 2nd of September, for rose-spotted fever, which had come out during the concluding week of August. She got through the fever pretty favorably, but for the last seven weeks has had a succession of most formidable abscesses in the back, the cervical glands, the internal ears, and the parotid glands; yet, in spite of the exhausting effect of the large discharge of pus from these spots, she has continued advancing in convalescence, she has gained flesh and muscular power, so that now she can sit up. For this favorable result she has to thank a most wonderful appetite, which never seems satisfied, even with an amount of food which is large for an adult, and which she delights to wash down with wine and porter. No tonics seem of so much use to her as an extra snack at physic time.

"The most extraordinary recovery from these pyæmic abscesses after fever you witnessed last year in a girl of sixteen (E. A—, admitted September 28th, 1860). She had very putrid fever, accompanied by hæmoptysis, epistaxis, and bloody discharge *per vaginam*. She got well through her fever by the help of hydrochloric acid and wine. But as she became convalescent in the third week in October, she began to have large boils or abscesses on the head; these were followed by abscesses running down into sloughing sores on the back. During the first week in November inflammation and swelling of the left leg began. This quickly ran on to purulent infiltration of the whole of the left thigh which, on November 28th, discharged two pints of pus in twenty-four hours, and lesser quantities daily for weeks together. On December 12th there was a large abscess in the axilla, which was opened and discharged several ounces of pus. Her state of debility was such that she could not in the least help to feed herself. Yet all this time her stomach was in a state that a gourmand would regard as the seventh heaven. She was literally always hungry. As she swallowed her last bit of beef-steak, she would feebly ask when she was to have some more, and what would be her dinner to-morrow. And the way her eager eyes followed any particle of victuals that passed her bed was quite affecting. She could fully have sympathised with the British tar who defended the West Indian climate:—'Bad climate this? I call it a capital climate; you're always thirsty, and there's lots to drink.' So we allowed her wonderful appetite full swing, and fed the delicate, puny maid like a gigantic navvy or gladiator. The consequence was that she recovered from an amount of purulent disease which it would have seemed impossible for the human frame to support, and recovered perfectly, for I saw her in April looking as healthy and walking as briskly as if she had never been ill.

"The moral of these cases is, do all you can to increase the appetite. Judge of the value of this drug and that drug, this tonic and that tonic, solely by the effect it has on the desire for food. If any remedy lessen this, insist upon leaving it off, whatever authorities may have recommended it; and form your judgment, not from tradition or prescription, but from its action in the individual case before you."

Art. 15.—*Typhus and Dysentery.* By Dr. Markham.

(*British Med. Journal*, April 5, 1862.)

The facts upon which Dr. Markham comments so lucidly and conclusively are from a very interesting paper by Dr. Duncan, one of the medical officers of health at Liverpool.

"The notorious Egyptian frigate, Scheah Gehaed, after a stormy passage of thirty-two days, reached Liverpool from Malta on February 16th, 1861. Her crew were chiefly Arabs, 476 in number; 200 of them were convicts, had never been to sea before, and were brought on board in chains. These *seamen* were "driven" up on deck to their turn of work. They were badly clothed, and badly fed; suffered much from sea-sickness, and, *sans façon*, discharged the contents of their stomach and bowels in and on all parts of the vessel.

The vessel was overcrowded; the force of the stench overpowering; and the filthy condition of the men and the ship so bad that, on the arrival of the vessel at Liverpool, she was sunk in the graving-dock by way of purification. The only hygienic measures taken by the captain, whose nobility appears to have been offended by the stench, were the ordering of the crew to be flogged in platoons of twenty to thirty per diem. The native doctor was apparently on a par with his patients. All that could be learnt from his sick-records of the voyage was, that a man had died. On arriving at Liverpool, the captain reported one dead man on board and six ill from cold. The pilot, however, had heard of thirty-eight on the sick-list; and some agents of the pacha put the number at eighty!

"The Egyptian surgeon, happily for his clients, soon fell sick also; and Mr. Irvine was called in. The truth consequently soon began to shine out of the darkness of this Egyptian bondage. Mr. Irvine found sixty-four sick—six of dysentery, five of diarrhœa, two of ague, and forty-nine of constipation; and to these twenty-three more were afterwards added, of dysentery, bronchitis, and constipation. And now comes the strangest part of this eventful history. Not a case of fever was there to be found among the sick. Here in the pest-house, as it had been, where pythogenesis had had her full swing; where men, weak in body and in *morale*, had been soaked in foul air, putrefying animal matters, and dirt; in fact, where hygienic rules had been supremely despised and disregarded—not a case of fever appeared. The dysentery was severe; for it carried off, from first to last, eleven of the men, thirty-five having suffered from it.

"But though no trace of fever could be found among the crew, that they had the fatal gift of communicating fever to others was only too painfully proved. Men who visited the vessel fell sick of fever. The sick of the crew spread fever through the hospital in which they were received for the cure of their dysentery, pneumonia, &c. Others of the crew, filthy, but (as supposed) in good health, while undergoing purification at the public baths, left there the fatal seeds of fever. In this ways, thirty-one cases of fever, and eight deaths, were produced by these Arabs among the Europeans of Liverpool. One bath-attendant died. Two visitors to the ship and five in hospital died. Three bath-attendants, twenty-five hospital patients, and three visitors to the ship, took the fever. The deadly disease was reported in all cases as undoubtedly exanthematous typhus.

"The very important and apparently unavoidable conclusions which may be gathered from these facts are:—1. That the matter which produces typhus may be carried about in the garments, or on the persons of those who are in health, or, at all events, not suffering from typhus, and so communicated to others; or, in other words, typhus may be conveyed from A through the streets of Liverpool by B, who has it not, and communicated to C. 2. We have the other remarkable fact—that this Arabian crew, who were soaked in the generated typhus fomites, suffered not from it. They could imbibe it; they could carry it about on their garments, and communicate it to others, and themselves be impenetrable to it! Dr. Duncan explains the fact thus:—he suggests that the systems of the crew were gra-

dually fortified against the poison by the daily habit of imbibing it; as the Styrian peasants, we are told, get wonted to lumps of arsenic, habit being a second nature. He also adds, that dark races are but little liable to typhus. In slave-ships, for instance, fever is said to be unknown; it is dysentery which reduces the profits of the Cuban slave-jobber. Is the generated morbific matter therefrom, which produces typhus in the white man and dysentery in the black man, identical? Dr. Copeland says it is. Sir Gilbert Blane is also quoted by Dr. Duncan to the same effect: 'These two diseases—fever and dysentery—may be considered as vicarious.'

"But we have facts on record, which show that the white man may also dispense around him this silent destroyer, himself free from its action. We have the famous Oxford Black Assize, and the Old Bailey session of 1750, for example, where the judges, jury, and spectators were the victims of fever communicated by the unaffected prisoner at the bar. Other striking instances are referred to by Dr. Duncan."

ART. 16.—*On an Indian Remedy for Smallpox.* By MR. HERBERT C. MILES, Surgeon, Royal Artillery, Halifax, Nova Scotia.

(*Proceed. of Epidemiological Society; British Med. Journal*, Nov. 30, 1861.)

Early in the last winter, a little coasting vessel landed a portion o its crew at an obscure seaboard village a few miles from Halifax. These persons were sick with smallpox; and the disease soon spread, first among the cottagers with whom the fishermen mixed, and subsequently among those from the capital who resorted to the village for the purposes of trade. Through the early weeks of spring, rumour constantly asserted that vast numbers of the seafaring population were attacked with the complaint; but it was not until early in March that the large civil hospital of Halifax, by the number of its weekly admissions for variola, began to corroborate rumour, and to authenticate the justice of the public anxiety. The disease in process of time extended to the troops in the garrison; but the proportion of attacks to those of the civil population was singularly small. While certain portions of the inhabitants of Halifax were suffering from the epidemic, alarming accounts reached that place relative to the terrible ravages of the scourge among the Indians and coloured people generally. Variola is the special plague among the Indians, and when they are invaded by this pestilence it sweeps them off by scores. Like the fire of the prairies, it passes over their encamping grounds, destroying all of human kind in its path. On this occasion, the most painful details were given of whole families being carried off by this loathsome disease. After some time, however, it was said that the pestilence had been stayed. One of the Indian race, it was asserted, had come into the disease-stricken camp possessed of a preparation which had the extraordinary power of curing the kind of cases that had hitherto proved so fatal. This remedy was believed to be so efficacious by the Indians, that, if given to them when attacked with smallpox, they looked forward with confidence to a speedy and effec-

tual cure. An old weird Indian woman was the fortunate possessor of the remedy in question. She had always been known as the doctress of the tribe, and had enjoyed celebrity for many years in consequence of her reputed knowledge of medicine and wonderful acquaintance with the herbs and roots of the woods. So well established was her fame among the Indians, that when sick they generally resorted to her, instead of to the white doctors, who are thought by them to be "no good." Captain Hardy, of the Royal Artillery, a most able and intelligent officer, who has been for years among the Indians, says that the "old squaw's" preparation has long been known among them as an infallible cure for smallpox, and that the Indians believe that it is successful in every case.

From the information gathered from the Indians, the following observations have been carefully sifted:

1. In the case of an individual suspected to be under the influence of smallpox, but with no distinct eruption upon him, a large wineglassful of the infusion of the root of the plant (*Sarracenia purpurea*, or pitcher-plant) is to be taken. The effect of this dose is to bring out the eruption. After a second and third dose, given at intervals of four to six hours, the pustules subside, apparently losing their vitality. The patient feels better after each dose, and, in the graphic expression of the Micmac, "knows there is a great change within him at once."

2. In a subject already covered with the eruption of smallpox in the early stage, a dose or two will dissipate the pustules and subdue the febrile symptoms. The urine, from being scanty and high coloured, becomes pale and abundant; whilst, from the first dose, the feelings of the patient assure him that "the medicine is killing the disease." Under the influence of the medicine, in three or four days the prominent symptoms of constitutional disturbance subside; although, as a precautionary measure, the sick person is kept in camp till the ninth day. No marks of the eruption (as regards pitting, &c.) have been left in the cases examined, if treated by the remedy.

3. With regard to the medicine acting (as believed by the Indians) in the way of a preventive in those exposed to infection, it is curious to note that, in the camps where the remedy has been used, the people keep a weak infusion of the plant constantly prepared, and take a dose occasionally during the day, so as to "keep the antidote in the blood."

ART. 17.—*Remarks on certain of the early symptoms of the Eruptive Fevers.* By M. SEE.

(*Journ. de Méd. et de Chir. pratiq.*, Oct., 1861.)

To say that a child is about to have an eruptive fever, and to announce beforehand that the disease will be measles, scarlatina, or smallpox, is a point of great interest, if not for the child, at least for the practitioner. It is the surest means of acquiring, from the first, the confidence of the family, for there is no doubt that people think more of the accuracy of the diagnosis and prognosis of a physician

than of all the care and intelligence he may have shown in the treatment of the case. "Let us see then," said M. See, "what are the prodromata of the eruptive fevers of which the observation is important."

A character common to the eruptive fevers is the suddenness of invasion, accompanied by a peculiar state of precordial anxiety, as pointed out by Borsieri. In typhoid fever the invasion is preceded by a lengthened period of discomfort; the child has lost its gaiety, and is fatigued without cause; this state lasts for several days.

Scarlatina is sometimes ushered in by symptoms which simulate cholera. Six months ago M. See was sent for to see the grandchild of a physician, who, at two o'clock in the afternoon, had been seized with choleraic symptoms. M. See could not see the child till half-past five o'clock. By this time, however, the eruption of scarlatina was manifest. Had the physician arrived sooner he would not have seen the eruption, but he would have examined the throat, and would infallibly have found the angina which always precedes and accompanies scarlatina.

Measles does not give rise to vomiting, which, however, is a premonitory symptom of scarlet fever and smallpox. If, then, there is vomiting, and no affection of the throat, examine the arm. If the vaccination cicatrix be well marked, there is every chance that the smallpox will be mild. One of the constant precursors of smallpox, and on which Chomel always laid great stress at his clinique, is pain in the loins. Also examine the back, for it is there that the first spots of smallpox make their appearance. In smallpox, also, the fever is continuous. In measles the premonitory fever is often remittent, or even intermittent. You have seen a child in the evening, feverish; next morning he seems lively, you are told that he has taken food, and you go away fancying that the little attack has passed off; then the fever returns, and soon other symptoms announce that the child is about to have measles; these other signs are the lachrymo-nasal catarrh, which appears about the third day. It may be said that influenza presents the same symptoms. No doubt the resemblance is pretty close. There is remittent fever, subject to exacerbations, and towards the third day the nose and eyes are affected. But to remove all doubts, it will be sufficient to auscultate the chest. If the disease is influenza, you will find already (by the third day) the signs of bronchitis; whilst if you have to do with measles, the results of the examination will be negative. In fact, it is on the fourth day that a child who has had a remittent fever, followed by a lachrymo-nasal catarrh, is seized with the characteristic cough. This cough, with its muffled sound, sometimes suggests to the parents the idea of croup, or of hooping-cough. It is neither one nor the other; it does not come on in paroxysms. As in influenza, it consists of separate coughs closely following one another, and which continue till the eruption makes its appearance.

One word on a complication which may render the diagnosis of certain eruptive fevers obscure. The scarlatina eruption sometimes appears within the first six hours, rarely later than twenty-four; but it sometimes happens that smallpox is preceded by a scarlatiniform

eruption, which has been especially described in England. This rash is sometimes limited to the belly. But even here there is no room for doubt. The rash does not appear till the second day, and if you examine your patient minutely from head to foot, you will find, especially on the back, some spots of smallpox. In fact, when the rash is present, the smallpox eruption has already commenced. Twice, a distinguished physician of Paris compromised his reputation by announcing scarlatina, while Chomel found, by examining the back, that he had to do with cases of smallpox.

ART. 18.—*On the use of Alcohol in serious cases of Rheumatic Fever.* By Dr. BEALE, Physician to King's College Hospital, &c.

(*British Med. Journal*, Jan. 25, 1862.)

In a clinical lecture recently delivered at King's College Hospital, Dr. Beale, arguing the propriety of giving stimulants in acute rheumatism, says:

"You must judge as to the propriety of giving or withholding stimulants from the general state of the patient, according to the same principles which enable you to decide as to the quantity and nature of the nourishment required. If you decide upon giving stimulants, you will determine the quantity after considering the strength of the pulse and heart's action and the condition of the nervous system. In some cases you need not give any, and in others will give only very small quantities; but there are cases which seem almost hopeless, that may be saved by the timely administration of small doses very frequently repeated; so that within two or three days, although a patient may have taken as many bottles of brandy, not the slightest indication of alcoholism has been produced.

"Practically, it is of great importance to regulate the quantity of alcohol according to the requirements of the system, and to administer it in small doses at regular intervals, so as to support the failing powers, from hour to hour. No greater mistake could be made than to attempt to act upon any arbitrary rules in the use of this most valuable remedy. For instance, to regard alcohol as a necessary remedy to be employed, and to be depended upon, in every case of rheumatic fever or any other disease, would be as grave an error as to refuse to give it in any case. There are cases of acute rheumatism which will get well without a drop of alcohol. There are cases of the same malady in which it would be very wrong to give alcohol—at least, during the earlier period of the attack; and there are cases which I believe can be saved by this remedy alone. It is possible that alcohol, by its action on the blood and nervous system, may, in certain cases, tend indirectly to increase the tendency to what we term the inflammatory conditions; but it is quite certain that, in other cases, it diminishes the tendency to these changes; and it is beyond dispute that inflammation of some of the most important organs of the body will resolve, and the effused products be absorbed, while the patient is taking from ten to twenty ounces of brandy in the twenty-four hours. It is also true that the absorption of inflammatory products

is carried on quite as rapidly in a low condition of the system under the influence of alcohol, as in a strong one in which not a drop of alcohol is given. Alcohol does not prevent the healing of wounds; but there are states of the system where repair does not take place until alcohol has been given to the patient.

"The question as to whether alcohol should be given or withheld in a case is generally determined, not by the fact of the presence or absence of any special morbid process, but by the patients' powers at the time; and in a case where alcohol is given, the proportion is determined by the degree of exhaustion. If the strength has diminished very rapidly, you would, from the first, give more than if the powers had been slowly failing. If the pulse diminished in frequency and increased in power after a few doses, you may be sure you are giving the right quantity. If the alcohol seems to produce little or no change you must give more. But if you watch a few cases from day to day, you will be more convinced of the great importance of studying the effects of this remedy in exhausting disease than from anything I can say on the matter."

One of the cases which serves as text for the clinical lecture from which these remarks are taken, and which will serve to give a clear idea of the practice under consideration, is the following.

CASE.—The patient is a girl in the Twining Ward. I. D—, æt. 14. (Vol. iii, p. 22.) We learn, from the history taken by Mr. Tyrrell, my clinical clerk, that this child has had two previous attacks of rheumatic fever, one five years ago, and another two years since. There is reason for believing that the heart was not affected in either of these attacks. It appears that, about ten days before her admission, this poor child was cruelly turned out of doors, and compelled to sleep in the open air, in wet clothes. We shall not feel surprised that a third and very severe attack of rheumatic fever was the consequence. In a few days she was seized with violent pain in the large joints, especially the knees, wrists and ankles of both sides. To aggravate her sufferings, there was a sore over the sacrum, and considerable vaginal discharge.

On October 3rd, the morning after her admission into the hospital, she was very restless, and had scarcely slept at all during the night. The pain in the joints was severe. She was perspiring freely. The heart's action was regular. No bruit was audible; but we detected a faint rub at the apex of the heart. Pulse 124; respiration 36. She was ordered twenty grains of bicarbonate of potash, with five grains of nitre in water, every four hours, and ten grains of Dover's powder at bedtime; milk diet; two pints of beef tea; and two eggs. The affected joints were wrapped up in cotton wool, and a linseed-meal poultice applied over the heart.

On the following day the rub was less distinct. She appeared weaker. Pulse 104; respiration 27. An ounce of brandy was ordered to be given during the twenty-four hours.

On the 5th (three days after admission), bronchial breathing, with slight crepitation, was heard over the spine of each scapula; but there was no marked dulness. The restlessness and distress were so great that I thought it well to give five grains of Dover's powder every four hours, and the following day the brandy was increased to two ounces. Pulse 120; respiration 40.

No marked change occurred during the next two or three days, but the patient was more exhausted.

On the 10th (seven days after admission), the brandy was increased to five ounces, and chloric ether was added to the mixture. The rubbing sound was no longer audible.

On the 12th (ten days after admission), the cardiac dulness extended to an inch and a half to the right of the sternum. The child was much prostrated. Her face and lips were very pale. Respiration difficult and catching, and she could only utter two or three words at a time. The surface of the chest was so tender that it was not possible to make a very minute examination. Pulse 160, very feeble; respiration 60. The heart sounds were not clear, but appeared distant and feeble. The impulse caused a fluttering, undulatory movement in the intercostal spaces lying over the heart. There could, therefore, be no doubt that effusion had taken place; but there was no evidence that the pericardium was distended to any very great extent.

The case was now serious, and might have terminated fatally within twenty-four hours; in which case, the pulse would have become quicker, and then fluttering; delirium would have appeared; the effusion in the pericardium would have increased, and, perhaps, fluid would also have been poured out in the pleura; the respiration would have become gasping; the temperature of the body would have fallen; a profuse perspiration would have broken out all over the body; and the distress which had been so painful throughout the disease would gradually have given place to comparative ease some time before life ceased.

How were we to endeavour to avert this result? It has been shown most conclusively that the tendency to effusion into serous cavities increases as the patient becomes exhausted. No treatment whatever could have caused the rapid absorption of the fluid already poured out; and, even supposing that any plan of treatment would certainly promote absorption of the lymph on the surface of the pericardium, and the fluid in its cavity, it was useless to think of resorting to such a course, because it was quite clear that any remedies, to be useful, must produce an immediate effect, not upon the fluid poured out, but upon the general state of the patient. In the present case, the quantity of lymph in the pericardium was not sufficient to cause us any anxiety. But, at the same time, we were anxious to guard against any increase in the effusion already poured out. Our first effort was to try to keep the patient alive. Her stomach digested. There was no retching nor vomiting; but the exhaustion was considerable. The effusion in the pericardium was affecting the heart's action; and delirium, caused by an insufficient supply of blood to the brain, and poor blood too, was coming on.

The treatment was modified as follows; and in these cases Dr. Beale always pursues a similar plan, modifying it in special details, according to circumstances.

The quantity of brandy was doubled, that is, increased to ten ounces in the twenty-four hours. An ointment, consisting of strong mercurial ointment and powdered opium, in the proportion of one drachm of the former to ten grains of the latter, was smeared on lint, and kept applied over the heart. In other respects, the treatment remained the same. Although there is no conclusive evidence that mercury administered internally exerts any decided influence in promoting the absorption of the lymph and fluid in the pericardium, Dr. Beale has seen undoubted benefit result from the external application of the above ointment. But he is not able to express a positive opinion as to the exact amount of beneficial influence to be attributed to the mercury or opium in the above-mentioned ointment.

On the following day, there was less distress, and the respiration had fallen to 48, but the pulse still remained at 160.

On the 15th, the pulse and respiration had fallen to 144 and 44 respectively; and in another twenty four-hours the pulse had further diminished to 120.

A manifest improvement had occurred in every symptom; and it was quite evident to every one that the case was progressing most favorably.

In four days from the commencement of this treatment, the pulse had fallen from 160 to 120, and the respiration from 60 to 44, and this improvement had occurred while the patient was taking ten ounces of brandy and three grains of opium during each period of twenty-four hours.

At this date (Oct. 17th), we thought we could detect a faint bruit at the apex of the heart; but on the following day, a mitral bellows-sound was distinctly audible.

In spite of the quantity of support this child was taking, she was very weak. The skin of the chest was covered with sudamina, and she was becoming extremely emaciated. The bicarbonate of potass and nitre were changed for chloric ether and ammonia as the pain in the joints had disappeared, and the quantity of opium was reduced.

On the 23rd, the patient had so far improved that we determined to decrease the quantity of brandy. She had no pain, and seemed perfectly contented. She slept well. Her tongue was becoming clean; and the sore over the sacrum was healing fast.

From this time, she progressed favorably; the brandy was further diminished to two ounces in the twenty-four hours; and a few days after this, it might fairly be said that she was convalescent.

ART. 19.—*On the Treatment of Rheumatic Gout.* By M. TROUSSEAU, Physician to the Hôtel Dieu, Paris.

(*Journ. de Méd. et de Chir. Prat.*, Nov., 1861.)

After relating two cases, and making certain comments, M. Trousseau proceeds:

Such are the symptoms and progress of rheumatic gout; it differs from rheumatic fever by the absence of fever and of cardiac complications, and from gonorrhœal rheumatism by the entire failure of any gonorrhœal precedent. It cannot be assimilated to gout, being seldom observed in women before the cessation of menstruation, and never presenting the chalk deposits so common in gout. Another characteristic of the disease, besides apyrexia, is this, that any joint once affected remains diseased for life. M. Trousseau conceives himself, therefore, justified in saying that the affection is of an essentially *progressive* nature, like muscular ataxy and atrophy and the general paralysis of the insane.

What are the resources of science for a disease which, left to the unaided efforts of nature, progresses in an uninterrupted manner, or seems momentarily to yield, but to resume its course, and run to a fatal issue?

At a time when M. Trousseau had not yet acquired the conviction of the specific nature of rheumatoid arthritis, he resorted to baths with corrosive sublimate, which he had found beneficial in cases of gonorrhœal rheumatism. To his great surprise, however, these medi-

cated baths yielded him but insufficient or negative results. When used daily, they give, however, considerable relief, especially when the disease has not established itself so as to acquire a sort of right of possession. Thus, in one of the two cases related, they were most serviceable. They are composed as follows:

Corrosive sublimate	½ oz.
Muriate of ammonia	1 oz.
Water	half a pint.

Dissolve, after careful trituration, and add to a common bath.

Nine years ago, M. Lasègue, M. Trousseau's clinical clerk, proposed, as an alterative in rheumatic gout, tincture of iodine, which M. Trousseau prescribed in small doses at first, gradually increasing its amount to 150 minims daily. This treatment yielded results of so satisfactory a nature, that it assumed at once the most prominent place in the treatment of the disease. The two patients above alluded to persevered in the use of this remedy for a long time, without any inconvenience whatever. The woman took tincture of iodine for four months without interruption, in daily doses of 15-60 minims. The other patient took for one year 75 minims every day. He then discontinued the remedy for one, two, and three months, and resumed it without any injury to his health for three years. Now that extensive experience has enlightened him on the subject, M. Trousseau unhesitatingly declares that, far from losing flesh, the individuals who have taken iodine in this manner have sometimes grown fat, and that the atrophy of the mammary gland has never been observed in females.

Other remedies, besides mercurial baths and tincture of iodine, are, however, necessary, and M. Trousseau has also recourse to hot sand-baths. This treatment is extremely efficacious, and is a useful substitute for thermal waters, the utility of which, in herpes and rheumatic gout, M. Trousseau ascribes more to their caloric than to their mineral ingredients. Fine sand, heated in a pan or digester, and stirred so as to equalise the temperature, is poured into an earthen jar when it has reached about 150° Fahr., and used in douches, baths, or bags, according to the requirements of each case. The temperature of the douche should be in inverse ratio to the height of the jet. This appliance can be thus taken advantage of so as to produce powerful counter-irritation, almost to the extent of causing burns, and the advantages of so energetic a medication can be readily conceived.

Some practitioners have recommended arsenical preparations. M. Trousseau tried in his patient the effects of baths containing arseniate of soda, but without any benefit. It is, however, a remedial agent which may be resorted to, and in that case it will be prudent to prescribe neither Fowler's nor Pearson's solution. The preparation which M. Trousseau employs is a solution of one grain of arseniate of soda in four ounces of distilled water. One teaspoonful of this fluid is exhibited, at first, night and morning, and gradually increased to two and three; he then administers it in table-spoonfuls, and in this manner it can be productive of no injury. Should it be preferred to give the medicine in pills, each pill should contain $\frac{1}{30}$th gr. of arsenious acid, from one to six of which should be taken, in cautiously graduated

doses, with the meals. Arsenic, as trainers and stable-men are aware, increases the appetite, and promotes assimilation.

We thus find, to conclude, four different classes of remedial agents, which the practitioner may resort to, either in succession or in combination with each other, at will. As to a cure, we cannot say that even by these means it is to be expected; but relief will be given, and improvement will take place, more marked if the treatment has been instituted at an early stage of the disease. Medical interposition must also be persevering in proportion as the evil is of more ancient date. And it is further necessary, in order to prevent painful disappointment, that both patient and physician should be well aware that, despite the most rational treatment, rheumatoid arthritis, in some cases, resists all the efforts of art, and brings on, notwithstanding the most intelligent and persevering treatment, unsightly and absolutely incurable deformities.

(c) CHRONIC DISEASES.

ART. 20.—*Exhibition of Alcohol during the rigor of Intermittent Fever.* By M. HÉRARD.

(*Journ. de Méd. et de Chir. Prat.*, Oct., 1861.)

M. Hérard has put this mode of treatment to the test in the wards of the Hôtel Dieu at Paris, and the particulars of two cases, thus treated, have found their way into the journals.

CASE 1.—A private in the marines, æt. 26, became affected, during a long residence in Senegal, with fever; the paroxysms, at first quotidian, subsequently assumed the tertian type, and despite the liberal exhibition of sulphate of quinine, they had already lasted for fifteen months. After his return to France, the fever did not at first return, but in June, 1860, the paroxysms reappeared and persisted for two months. In June of the present year another relapse took place, and the patient was admitted into the Hôtel Dieu. He stated that in Africa his legs had been swollen and œdematous; his complexion bore a cachectic aspect, and the hue of chloro-anæmia. The fever returned in tertian paroxysms in the evening, lasted two or three hours only, but with considerable violence. A sense of general lassitude was complained of, and also supra-orbital headache which continued during the apyretic period. The attacks were watched for a week, and returned with a degree of regularity which showed they were not likely to diminish spontaneously, and yield to a mere change of residence; M. Hérard therefore ordered about two ounces of rum to be given in two doses, with an interval of ten minutes, on the first manifestation of the rigor. The first dose instantaneously arrested the shivering, warmth was restored by the second, and altogether the paroxysm was considerably milder than those which had preceded. The next day the feeling of lassitude did not exist; and a hitherto unaccustomed sensation of comfort was experienced. The same prescription was followed on the morrow, and a very slight shivering fit took place; the fever has not since returned.

CASE 2.—A female patient, æt. 28, affected with a very obstinate intermittent fever which she had contracted in the Department of La Creuse. She presented all the outward signs of the palludal cachexia. An emeto-cathartic was in the first place resorted to, for the purpose of remedying a

coexistent saburral condition of the primæ viæ. Three paroxysms were permitted to take place without any interference, and rum was then exhibited as in the former case. Under the influence of the spirit the paroxysm was considerably lessened, and the patient felt better than usual on the following day. The fit did not return on the third day, nor yet during the next six weeks, after which the woman was discharged from hospital.

M. Hérard directs attention to the physiological and medical researches of M. Burdel, of Vierzon, on the climate of La Sologne. M. Burdel brought forward the remarkable fact, that the foreign excavators employed in the construction of the railway line from Orleans to Vierzon, drank wine and brandy freely, and were far less subject to fever than the natives, who more usually slaked their thirst with water from the adjoining pools, mixed with a little vinegar. The scarcity of wine in La Sologne is, in M. Burdel's opinion, one of the causes which operate most powerfully in the development and obstinacy of the fevers so common among the poorer class of inhabitants. In such a country, wine must be viewed as a most useful tonic, and a valuable stimulant of the vital powers. This author therefore earnestly recommends the cultivation of the vine around every village surrounded by sunny hills. The propagation of the vine, says he, wherever circumstances favorable to its culture are to be met with, not as a remunerative speculation, but for the purpose of supplying the poor with a tonic and inexpensive beverage, far preferable to the acidulated or honeyed drinks in general use in Sologne, is, after the production of wheat, one of the most certain means of neutralizing the influence of the climate, and of withdrawing from the deleterious agency of ague a population, the greater part of which has for centuries been but an object of pity.

ART. 21.—*Remarks on Arsenious Acid, in large doses, in Intermittent Fever, as a substitute for Quinine.* By Mr. TURNER, Surgeon to H. M. Brigade, Bombay Horse Artillery.

(*Proceed. of Royal Med. and Chir. Society*, June 25, 1861.)

The author has employed arsenious acid for twenty years in the treatment of intermittent fevers, and on account of the great drain upon the cinchona-tree, its failure in India, and his strong opinion as to the equal if not greater value of arsenious acid in the above-named diseases, he now brings the results of his experience before the profession. He considers the fears of inconvenience or danger arising from the remedy as much exaggerated, and instances the case of a child of nine months, to whom he gave twenty minims of the arsenite of potash within ten hours, repeating the dose on the following day, with the only effect of curing an obstinate quotidian intermittent. The course usually adopted by the author was to give the arsenite of potash as in the following prescription:—Arsenite of potash and compound tincture of cardamoms, of each half a drachm; gum mucilage, three drachms; camphor mixture or water, half an ounce:

mix. To be given every second hour four or five times, the last to anticipate the expected paroxysm at least two hours.

ART. 22.—*On Tannin as a substitute for Quinine in the treatment of Intermittent Fever.* By M. LERICHE.

(*Journ. de Med. et de Chir. Pratique*, Dec., 1861.)

M. Leriche, formerly attached to the dispensaries of the City of Lyons, has recently published an interesting memoir on the anti-periodic virtues of tannin.* This essay is well worthy of attention, and has been honoured with a prize by the Society of Medical Sciences of Brussels. The author accounts for the former failures of tannin in the treatment of periodic affections, by the insufficiency and minuteness of the doses prescribed by Dr. Chaussarel. In the experiments instituted in 1840 by this gentleman, tannin was exhibited in gradually increasing doses from ten to forty-five grains in six ounces of fluid, to be taken in table-spoonfuls every three hours during the apyretic interval. Now, M. Leriche considers that this dose is utterly insufficient suddenly to check the paroxysm with any degree of certainty, and he believes that it cures the fever only when persevered in for a very long time. Hence the treatment becomes quite as expensive as if quinine had been resorted to, and the only advantage of the use of tannin, economy, is sacrificed.

In ague, whatever be the type of the fever, M. Leriche recommends the medicine to be given at the outset in doses of twenty to thirty grains, according to the degree of intensity of the disease, and to be taken three hours before the paroxysm. Two or three doses are usually sufficient to effect a cure, and it may be necessary to exhibit as much as one drachm or a drachm and a quarter at once. If the fever should not yield, fifteen grains only should be given, in a mixture to be taken in table-spoonfuls every hour. M. Leriche has never seen this remedy fail in its effects. He has administered tannin in 144 cases, 10 of which were still under treatment when his work was sent to press; 134 patients had been entirely cured, and two of these were men who had recently returned from Algiers with the African fever.

The following are some of M. Leriche's most usual prescriptions:

Mixture.

Aq. destil., ℥iv;
Aq. flor. aurant, ℥j;
Acidi Tannici, gr. xv ad 3iss;
Syrupi, ℥j. F. s. a.

To be taken in table-spoonfuls hourly, or in two doses a couple of hours before the fit.

Powder.

Acidi Tannici, ℥j.
Divide in chartulas viij.

* A pamphlet, 8vo, pp. 27, Savy.

Each powder to be taken in a wafer, in jelly, or dissolved in half a glass of sugar and water.

Syrup.

Syrupi, ʒxvj;
Aq. flor. aurant., ʒij;
Acidi Tannici, ʒij. F. s. a.

Every ounce of this syrup contains about eight grains of tannin.

Enema.

Decocti Hordei, ℥vj;
Acidi Tannici, ʒss;
Vin. Opii, ℥viij. F. s. a.

The addition of laudanum increases the chances of this enema being longer retained.

At the same time, M. Leriche agrees with Lind, Cullen, Chomel, Littré, and others, in the propriety of supporting the patients with generous nutriment. The author attributes to this line of conduct the great scarcity of cases of paludal cachexy in his practice, and of those passive dropsies which attest the great depression of the system.

Art. 23.—*On the treatment of Gout by Guaco.*

By Dr. Edw. W. Pritchard, Glasgow.

(*Pharmaceutical Journal*, Oct., 1860.)

"Some years ago," says Dr. Pritchard, "I wrote an article upon this subject in the 'Medical Times and Gazette.' Since then, my experience of this useful drug has been so convincing of its efficacy, that I should fail in my duty to science and my brethren of the faculty were I to conceal its virtues. The form I have exhibited it in is that of the tincture, made from the ordinary stem, sliced, &c. Dr. Adrian Stokes, of Stroud, mentions that the properties of 'guaco' have been highly extolled by a Spanish gentleman of Cuba, Senor Don Andreas Dias. The immediate action seems to be powerfully tonic—'a stimulating tonic.'

"Dr. Duvon, of Guayaquil, found it exceedingly successful in the removal of chronic rheumatism and sciatica.

"Dr. John Lewis Donnett, of the Royal Naval Hospital at Lisbon, placed much confidence in the remedy, as a tonic in recovery from bilious remittent fever of the tropics.

"I am not aware if either of these gentlemen tried it in gout; but, on looking over my notes, it is almost incredible the uniform relief (in every instance of well-diagnosed, indisputable podagra) that has followed its exhibition. The guaco of Oromoko is said to be specific against the bite of serpents and snakes. Dr. Hobson, of Leeds, whom I presented with a preparation of the guaco, experimented on rabbits bitten by the Cobra da Capella, but without any success, which is imputed to its application, and undoubtedly his careful method of using the antidote should have succeeded; yet I am disposed to believe, in this instance, it is the fresh, succulent Aristolochiaceous

plant, newly plucked, that may possess principles lost by keeping and storing the specimen. Certain am I that the natives rush to the plant in cases of being bitten by venomous reptiles, all their fear disappearing on getting a handful, chewing it, and applying it to the wound as quickly as possible—some even carrying it about them in readiness for such an accident.

"The usual dose I have been in the habit of giving in attacks of gout is from ʒss to ʒj of the tincture every four hours, largely diluted with distilled water—a tumbler each time. I also apply the tincture by sponge or saturated flannel over the part affected.

"The following is the formula for the tincture of guaco:

"Guaco, sliced, 5 ounces.
Proof spirit, 2 pints.
"Macerate for fourteen days, and strain."

ART. 24.—*On Brass-founders' Ague.* By Dr. GREENHOW.

(*Proceedings of Royal Med. and Chir. Soc.*, March 12, 1862.)

This disease first fell under the author's observation during a brief holiday visit to Birmingham in the autumn of 1858, and he has subsequently been able, on several occasions, to investigate its history and causes in Birmingham, Wolverhampton, Sheffield, and Leeds. The symptoms have, as the name implies, some resemblance to an imperfect paroxysm of ague; but they differ from it in this respect, that the paroxysms occur irregularly, and are distinctly traceable to exposure to the fumes of deflagrating zinc. The attack commences with *malaise*, a feeling of constriction or tightness of chest, sometimes accompanied by nausea. These always occur during the after-part of a day spent in the casting-shop, and are followed in the evening or at bedtime by shivering, sometimes succeeded by an indistinct hot stage, but always by profuse sweating. The sooner the latter follows the setting in of the cold stage the shorter and milder is the attack, and the less likely is the caster to be incapacitated for work on the following day. Headache and vomiting frequently, but by no means always, accompany the attack, which at the worst is only ephemeral; but the attacks are sometimes of frequent occurrence. Persons who have but lately adopted the calling, or who only work at it occasionally, and regular brass-founders who have been absent from work for a few days, are more liable to suffer from this disease than those who work at it continually. The men themselves attribute this disease to inhaling the fumes of deflagrating zinc, and there can be no doubt that their opinion is correct; for, on the one hand, several other classes of operatives are habitually exposed while at work to conditions exactly similar to those of the brass-founders, except the liability to inhale the fumes of zinc, and yet do not suffer from this ailment; and, on the other hand, brass-founders suffer from it in almost exact proportion to their liability to inhale these fumes. The results arrived at by the author of the paper are—1st. That brass-founders, and doubtless other operatives exposed to the fumes of deflagrating zinc, are liable to suffer from symptoms resembling an irregular kind of intermittent fever. 2nd. These

symptoms consist of *malaise*, listlessness, aching of the limbs, nausea, headache, and shivering, with occasionally vomiting, followed sometimes by febrile reaction, but always by profuse sweating. 3rd. The severity and frequency of the attacks are much influenced by the regularity with which men work in the casting-shops, those who work steadily at the occupation appearing to acquire a tolerance of the poison, which is, however, only temporary, seeing that after a few days' absence from work even the most seasoned casters are apt to have an attack of the metal ague on being again exposed to the fumes of deflagrating zinc. 4th. The severity and frequency of the attacks depend mainly upon the quantity of zinc-fumes evolved into the atmosphere of the casting-shops, those men who mix the metals, and especially those who use a large quantity of zinc in their castings, being much more liable to suffer than those who merely re-melt brass bars, or make brass containing but a small proportion of zinc. 5th. Any cause which tends to retard the dispersion of the fumes into the atmosphere—such as a close, ill-ventilated workshop, or foggy weather, or a high wind that beats back the fumes into the shop—increases the liability of the casters to suffer from metal ague. 6th. Although the cold stage is usually preceded by well-marked prodromata, slight causes, such as getting into a cold bed, or any trifling derangement of the health, are apt to excite a paroxysm of brass-founders' ague in persons already predisposed to it by habitual exposure to the fumes of deflagrating zinc. 7th. Operatives, such as makers of galvanized iron-ware, who work over molten zinc below the temperature of deflagration, enjoy an entire immunity from this disease.

ART. 25.—*A Remark on Lead-poisoning.*

By Dr. GUSSEROW, of Berlin.

(*Wiener Med. Wochenschr.*, Nov, 2, 1861; and *British Med. Journal*, Feb. 1, 1862.)

In experiments with lead on animals, Dr. Gusserow has constantly found the metal deposited in appreciable quantities in the muscles, while it was absent, or traces only were found, in the central organs of the nervous system. Hence in lead-palsy the paralysis arises from disease of the muscular tissue, which loses its capability of obeying the impulse conveyed by the motor nerves. In what manner the change takes place, Dr. Gusserow observes, it is at present difficult to determine, as we as yet know little of the chemical changes which take place in muscle, or of the combinations which lead forms with muscular tissue. The idea that the muscles are primarily affected is favored by the circumstance observed by Duchenne, that the electro-muscular contractility is lost at an early period, while motion can still in many cases be produced by a strong impulse of the will. Further researches must determine whether the localization of the paralysis to certain groups of muscles is dependent on a special deposition of the lead in the part. Dr. Gusserow remarks, that the knowledge that lead deposits itself specially in the muscles is only one step towards the comprehension of the disease; how the deposit is localized, and what changes are produced in the tissue, must yet be ascertained. The freedom of the nervous system from the presence of the metal renders

difficult the explanation of lead-colic and of cerebral disorder dependent on lead (*encephalopathia saturnina*). Dr. Gusserow has confirmed the theory that lead is eliminated by the bile and urine. The elimination by the urine is very gradual; and hence, he says, the statement that lead appears in large quantities in this secretion after the use of iodide of potassium should be received with caution. He has also found the lead regularly and in large quantities in the bones—a circumstance which is interesting from the fact, that among minerals lime is in many instances replaced by lead. It is evident, then, that lead behaves in the organism in the same way as lime; but of the nature of the phenomena, in either case, we know equally little.

II. SPECIAL QUESTIONS IN MEDICINE.

(A) CONCERNING THE NERVOUS SYSTEM.

ART. 26.—*The Therapeutics of Delirium Tremens.* By Mr. J. L. RANKING, Surgeon-Major to H. M.'s 105th Regt. L. I.

(*Madras Quart. Journ. of Med. Science*, Oct., 1861.)

"Within the last few weeks," says Mr. Ranking, "the payment of the 'bounty' has afforded the men the means of indulging their propensities for drink to an extent which probably never fell to their lot before. Some thousands of rupees were put into circulation, and the consequence was that eighty-one cases of ebriositas (drunkenness in its most profound form), and fourteen cases of delirium tremens, passed through the hospital.

"The experience thus afforded us has led to our forming an opinion as to the therapeutics of delirium tremens, which we may express in the following propositions:

"1st. That, *in the very large majority of cases, alcohol* may not only be *safely* but *advantageously dispensed with.*

"2nd. That *it, or other accustomed stimulants, cannot be entirely laid aside in old soldiers*—men who have drunk hard all their lives, and who have experienced prior attacks of the disease.

"3rd. That *opium* is *unnecessary* in *all cases*, and *positively injurious in many.*

"Or to express the propositions differently:

"1st. The *young* soldier, *whose eliminative powers are unimpaired*, can be treated with safety and advantage without a drop of alcohol or a grain of opium.

"2nd. The *old* soldier, *with organic visceral disease*, requires no opium; but *does require some of his 'accustomed stimulus,'* combined with eliminants and nutrients.

"3rd. That *opium is unnecessary in all cases;* that it often fails to induce sleep, which succeeds to its withdrawal.

"4th. That if pushed to its full extent, it may and sometimes does induce a sleep passing into coma and death."

Of the fourteen cases of delirium tremens treated by Mr. Ranking without opium, and upon a plan which was almost exclusively eliminant and nutritive, the results are highly satisfactory when compared with the results of the old mode of treatment by opium in large doses, fearlessly repeated until the patient sleeps.

"Of these fourteen cases, three presented all the symptoms characteristic of the fully developed disease, or of the third stage. In two there were unquestionable evidences of organic disease of the kidneys—a complication of a most formidable nature, and one materially influencing the result. One, treated *entirely without opium and alcohol, died;* the other, *who had a moderate allowance of alcohol, recovered.* The third, a young soldier, but with a very severe attack of the disease, recovered without, as before said, a grain of opium or a drop of spirit.

"The mortality in relation to these fourteen cases, then, stands as follows:—1 in 14, as relates to the whole group, without reference to the *stages* of the disease. Or, all in the first and second stages of the disease recovered, while of those advanced to the third stage 1 in 3 died.

"Without appearing to contend too warmly for the treatment without opium and alcohol, we may advantageously inquire, would the case lost, taking into consideration the condition of the kidneys, and we may add also of the liver, which was far advanced in fatty degeneration—would that case have benefited by the exhibition of opium and alcohol, one or both? Knowing as we do, that opium is very ill borne in all cases of organic renal disease, that a dose of that drug, which may safely be given to a healthy individual, may prove a poisonous dose to one whose kidneys are organically diseased, our answer must be, we think, in the negative. Alcohol, in a similar case occurring to us, we should, with the experience since afforded us, certainly give in *moderate* doses, to sustain the vital powers while the blood was being rid of its urea; for in the case alluded to, we have no doubt that death resulted from uræmic poisoning; the condition of the urine during life, and examination of the kidneys after death, proved that they were spoiled for all the purposes of eliminatives.

"We would also remark that this case is the only one which has occurred in our practice which in the least degree favours the views of those who consider that the disease is often caused by the withdrawal of the accustomed stimulus.

"The patient was a known sot. On admission his case did not appear a very severe one, and it was not till the third day after admission that serious symptoms arose. Would a pretty liberal allowance of brandy from the commencement have saved him?

"It remains for us to give the promised instances of the injurious effects of large and repeated doses of opium.

"In two cases, in which many nights had been passed without sleep, cases which we had treated on the eliminant and nutritive system entirely, it appeared desirable to force sleep. In each case ʒiss of the Liq. Opii Sedativus was prescribed at 8 p.m., and ʒss directed to be repeated every two hours till the patient slept. In both instances we were summoned after midnight, the patients being in a state of alarm-

ing sinking or collapse, both under the impression that they were dying. In both instances the opiate was withdrawn, and camphor and brandy given. They rallied slowly, and both slept the following night, after the exhibition of a glass of hot 'brandy and water.' We could not attribute the condition of collapse in these cases to anything else than the Liq. Opii; the patients themselves attributed their feelings to the opiate, and both rallied under stimulants after the withdrawal of the opiate. The *ill* effects of the opiate and the *beneficial* effects of the brandy were to our mind most apparent. These were the only two cases in which full doses of opium, 'fearlessly repeated,' were tried; no sleep followed, although in each case ʒiiss of the drug had been taken; and our firm impression and belief is, that if we had continued it till the patients slept, they would have slept the sleep of death.

"We are aware that we have advanced nothing new in this paper; all has been said before, much better than we have written it.

"We are, however, so strongly impressed with the weight of the moral and, we may add, economic grounds upon which the system advocated is based, that we have considered it our duty to show the extent to which we have been able to apply it during a period of almost unprecedented excess.

"The economic valve of the system, as applied to this regiment, we will elucidate in our concluding remarks.

"Since the arrival of the regiment at this station in April, 1858, up to the date of our assuming charge, we find 171 cases of 'ebrietas' and 'delirium tremens,' with a total expenditure of brandy (*in such cases only*) of 96 bottles and 5 measures; or, allowing 24 ounces to each bottle, of 14 imperial gallons.

"In our practice, between 81 cases of ebriositas and 14 of delirium tremens—total, 95—the expenditure has been only 3 bottles and 5½ measures.

"On the old system it would have equalled (taking the average of the 171 cases above given) some 53 bottles, represented in value, at the commissariat rates of Rs. 18-4-0 per dozen, by Rs. 84.

"The systematic examination of the urine for evidences of organic renal disease should never be omitted. Prognosis hinges mainly upon the existence or non-existence of organic changes in the kidneys and liver, and we have a strong suspicion that the large majority of cases which terminate fatally will be found to be associated with such pathological conditions as forbid the hope of elimination of the poison of alcohol, at the same time that they offer the further complication of uræmic poisoning."

ART. 27.—*On the treatment of Delirium Tremens by Digitalis.* By Dr. MORELL MACKENZIE, Registrar to the London Hospital.

(*Lancet*, March 1, 1862.)

Three cases have come under Dr. Mackenzie's notice in which digitalis was given in the doses recommended by the late Mr. Jones, of Jersey. In two of these death occurred; in the third the patient

recovered, but the digitalis had to be abandoned, and recourse had to stimulants and opium.

CASE 1.—W. P—, æt. 28, a potman, and an habitual dram-drinker, was admitted into the London Hospital, under the care of Dr. Fraser, at seven o'clock in the evening of the 6th of July, 1861. Though he was fearful and highly tremulous, his case did not appear unusually severe. On auscultation, there were no signs of cardiac disease, and half an ounce of the tincture of digitalis was accordingly prescribed. A nutritious diet was ordered, but no stimulants were allowed. An hour later the pulse, which was previously at 84, was reduced to 60; it was full and regular. At ten o'clock the dose was repeated, and the patient passed a quiet, though sleepless, night. In the morning, another half ounce was given; and, in the afternoon, the dose was again repeated. On both occasions, about half an hour after taking the medicine, vomiting supervened. There was no increase in the renal secretion. The patient did not appear much distressed by the sickness; and in the afternoon he had a steady pulse of 68. During the day he became very restless, and, instead of being timid and subdued, was now fierce and fearless, requiring powerful restraint. In the evening, he was still more violent; and, at nine o'clock, the digitalis was again repeated; but this time only two grains were given. Between ten and eleven, being now even more excited, it was determined to discontinue the digitalis and try opium; but before the latter drug could be administered, after a short but violent struggle with his attendants, which at first appeared voluntary, but afterwards convulsive, the patient suddenly expired.

The following extract from the account of the post-mortem examination, shows the condition of the heart after death, and perhaps some relation between the therapeutics and the pathology:—"Little fluid in the pericardium, in which the heart lay like a flaccid, empty bag. To the touch, before removal, the cavities of the heart and large vessels seemed almost empty. On cutting across the great vessels, only a small quantity of dark fluid blood escaped; *the whole heart felt flaccid, and its cavities did not contain half an ounce of blood.*" I may mention that there was no appearance of disease in the brain or membranes, except that the dura mater was slightly adherent to the skull in the parietal and occipital regions. There were a few drachms of serous fluid in the lateral ventricles.

CASE 2.—In the case of the next patient, who died after the administration of half an ounce of tincture of digitalis (which was given to him by a practitioner shortly before he was brought to the hospital), the man was admitted in a semi-comatose condition, from which he never roused, and unfortunately his friends objected to an autopsy.

CASE 3.—This case was that of H. N—, æt. 45, a butcher, admitted under the care of Dr. Fraser, on the 14th October, 1861, with the usual symptoms of delirium tremens; "the hands and tongue were tremulous, and, though slightly excited, he was quite sensible." The opiate treatment was adopted, but, no improvement taking place, it was determined to try digitalis. Within eleven hours the patient took an ounce and a half of the tincture of digitalis, in three half-ounce doses. Though the frequence of the pulse was diminished, the nervous symptoms were aggravated; and, from the report of Mr. Frederick Carter, it appears that "an hour after taking the draught (the third dose) the patient became very troublesome and violent—so much so that he was removed to the attic and placed in a strait-jacket." Opium in large doses was now prescribed, and the patient was put under chloroform, in order that the system might be more readily affected by the narcotic. On the 29th October, after taking five drachms

of the tincture of digitalis in nineteen hours, he slept for some hours, and awoke quite collected. The effects of the digitalis were very similar to those produced in the potman who died, for in both the timidity of delirium tremens gave way to the fury of acute mania.

Art. 28.—*On the use of Arsenic in warding off Apoplexy.* By M. Lamare-Picquot.

(*Journ. de Méd. et Chir. prat.*, Oct., 1861.)

M. Lamare-Picquot, chief physician of the hospital of Honfleur, has collected a series of fifty-four cases, illustrative of the efficacy of arsenious acid in checking the premonitory symptoms of cerebral apoplexy.

Arsenious acid diminishing the globular element of the blood, the condition of that fluid must previously be ascertained, and, when the blood-discs are found to exceed the healthy proportion, arsenious acid, in doses of one fifteenth to one sixth of a grain, should be taken daily in a four-ounce mixture, one half at each meal. M. Lamare-Picquot, who has tested the efficacy of the remedy in his own case, recommends, to obviate relapse, that its use be continued for some time after recovery.

Art. 29.—*On Hysteria.* By Dr. Thomas K. Chambers, Physician to St. Mary's Hospital, &c.

(*British Med. Journal*, Dec. 21, 1861.)

Dr. Chambers arrives at these conclusions in a clinical lecture upon three cases of hysteria:

"1. Hysteria is a disease (a word which I always use as synonymous with deficiency of life) as much of the mind as of the body.

"2. In some cases the mental, in others the bodily, phenomena predominate.

"3. The predominance of one or other must be our guide whether moral or physical agents are most required in the treatment.

"4. The aim of the moral treatment must be the teaching the patient to exert the will; and that is best done by a change of habits and scene.

"5. The organ which aids us most in our physical treatment is the stomach."

Art. 30.—*On Moral versus Pharmaceutical Means in the treatment of the Insane.* By Dr. McFarland.

(*American Quar. Journal of Med. Science*, July, 1861.)

In a recent report on the *Illinois State Hospital for the Insane*, which is included in an article on the "Reports of American Institutions for the Insane," Dr. McFarland says—

"We believe that success, in the treatment of the insane, largely depends on the ability to engage every mind in some sort of employment or recreation. The doctrine that insanity, even when unconnected with palpable physical disease, is to be treated by the appliances of the apothecary's art merely, belongs to a bygone age. Hence, no means is to be despised that will draw any mind from its morbid contemplations."

Then, after alluding to the employment furnished to the patients on the farm and garden, in the dairy, the kitchen, the laundry, the bakery, and the carpenter's shop, Dr. McFarland proceeds:

"In the winter season, mattress making and mat braiding, both involving considerable labour in the preparation of material, are excellent methods of engaging the attention of many who would otherwise find the time hang heavily. For indoor amusement, books, newspapers, games of chance and skill, with an occasional social reunion, at which large numbers of the insane, of both sexes, with their attendants, join for a few hours in temperate festivities, are all relied upon, and each commends itself to some especial class. Yet, after enumerating all the ordinary recreations in use to while away the monotony of hospital life, the list would be radically deficient if no mention was made of what is, after all, the most unfailing of all entertainments—the mutual attrition of minds so abounding in angularities and eccentricities that thought assumes shapes grotesque enough to amuse the gravest auditory. No one can be long in an institution for the insane without perceiving that the influence of insane persons upon one another is generally good, notwithstanding excitements among them are to a degree contagious.

"Some of the most salutary influences have been proved to have arisen from the contemplation by one insane person of another in a still worse condition. But the most striking of these mutual influences is produced by the entrance of some new-comer, who brings into the common social stock some accomplishment of novel kind, or some new 'sensation' idea, by which he can make himself conspicuous. The gentleman who could utter vocal sounds from his throat nearly resembling the strains of an Æolian harp was for some months as good as an ever-present instrument of agreeable music. One gentleman, of fine education and much general intelligence, with a singular mental activity, has kept those about him for months together on the high wave of interest at a scheme for founding 'the Republic of Pomona in the South Orkney Islands.' From the first conception of this plan to its present complete development, every department of art and science in any way contingent to it has been discussed with a thoroughness that has been quite exhaustive. The disquisitions pronounced upon geography, navigation, purveyance, political economy, municipal government, and state religion, would have done no discredit to the author of the New Atlantis. These spontaneous sources of interest are sometimes better than any set entertainment." * * * *

"Among the agreeable incidents of the past two years we place prominently a visit from Miss D. L. Dix, in the summer of 1859. The spirit which actuated this philanthropic lady in setting on foot the

measures which led to the establishment of this institution was, on this late occasion, found to be still as active as ever. Appealing in person to the liberality of those benevolent citizens in whom this community happily abounds, a fund of several hundred dollars was raised and placed in the hands of a committee, which, having been remitted to her, resulted in the purchase of a library of about 250 volumes, some fine stereoscopes, and a large collection of engravings, which, being framed at the institution, are scattered, with liberal profusion, about the patients' wards and sleeping rooms. * * * *

"As all are liable to the sad visitation of insanity—the person of refined and sensitive nature as well as others—and as the radical principle of all insane hospital treatment is that of regulated association of numbers together, this subject cries loudly for the aid of the philanthropic legislator. Now, while the penitentiary at Joliet is in process of construction, is the time when this reproach should be taken away from this institution. Every prison, of course, has its infirmary, and it only needs the attachment of some rooms of greater strength to give such cases of insanity as may arise comfortable accommodation. Then, the repeal of any act authorising the transfer of such cases would for ever remedy the evil. Either this must be done, or the ends of justice and the designs of philanthropy must continue to be infringed.

"The subject reduces itself to the plain question: '*Which is the more proper, to have a hospital attached to a penitentiary, or to have a penitentiary attached to a hospital?*' The former is a necessity in all instances, a humane juxtaposition, which should never be wanting; the latter is a needless incongruity, corrupting to the whole employed corps of the hospital, and, if suffered to continue, would surely be eventually regarded as a reproach upon the ruling sentiment of the state."

Art. 31.—*Large Abscess in the Brain, without symptoms.* By M Richet.

(*Gaz. Hebdom. de Méd. et Chir.*, No. 46, 1861.)

Case.—A youth, æt. 18, who applied as an out-patient at the Hôpital St. Louis, on account of a purulent discharge from the ear. So little inconvenience did he feel from his ailment, that he was with difficulty persuaded so enter the hospital for treatment. With every appearance of excellent general health, he died suddenly next day, immediately after the occurrence of a convulsive paroxysm. At the autopsy, the petrous bone was found diseased, but the dura mater covering it had not undergone any change. The cavity of the tympanum was filled with pus, which obtained its discharge both by the meatus and Eustachian tube. All the convolutions of the left hemisphere had become effaced, and a collection of pus occupied the whole of the sphenoidal and occipital lobes, the parietal lobe alone remaining intact. Very small abscesses were scattered throughout the parietal lobe. This patient had never manifested the slightest intellectual disturbance, and no symptom indicated the existence of cerebral

lesion, when the pus, bursting into the lateral ventricle, caused instant death.

This case was related by M. Richet at a recent meeting of the Parisian Society of Surgery.

ART. 32.—*Valerianate of Ammonia in Neuralgia.* By Dr. O'CONNOR, Physician to the Royal Free Hospital, &c.

(*Lancet; Dublin Medical Press*, Jan. 29, 1862.)

Dr. O'Connor says that valerianate of ammonia rapidly decomposes, and becomes very uncertain in its action, if it be retained in a state of crystallization, and that a solution is free from these objections. The smallest dose of the solution given is equivalent to twenty grains of the crystal.

CASE 1.—J. R—, a man, æt. 46, a porter, unmarried, was admitted November 9th, complaining of excruciating pain in the right side of the face, commencing near the malar bone, from thence extending to the nose, over the whole of the upper and then to the lower jaw. He has been subject to the pain for ten years; it is generally most severe about eight o'clock at night, but he is never totally free from it. For the last week it has been most excruciating, and he has had scarcely any sleep. He has been under the care of many medical men, and sought advice at various institutions, without benefit. Dr. O'Connor ordered him a dose of compound powder of jalap to be taken directly, and a draught of three drachms of Bastick's solution of the valerianate of ammonia in infusion of calumba every three hours. On November 16th he again presented himself at the hospital, when he said that after taking two doses of the medicine the pain was considerably relieved, and that he had no occasion to have recourse to the remedy after the sixth dose. He is now well and free from pain.

CASE 2.—P. B—, a married woman, æt. 31, admitted on the same day as the foregoing; has two children. For a number of years she has been subject to attacks of neuralgia, which come on generally about five o'clock of an afternoon, and continue with great severity for five hours. The pain seizes her first behind the right ear, extends to the nape of the neck and back of the head, and frequently shoots with great rapidity along to the malar bone, then to the lower jaw; and she is suddenly seized with pain at the region of the heart. She is suffering from aortic valvular disease. At times the pains are so severe that she cannot bear the slightest blast of wind, and is obliged to roll herself on the floor. She was ordered three drachms of the solution of the valerianate of ammonia in infusion of calumba every three hours. On November 13th she was very much better; has had only three attacks since the 9th. The medicine to be continued. 23rd.—Has had no pain since the 18th.

CASE 3.—R. P—, a married woman, æt. 42; has had eight children; works as a laundress; has suffered from neuralgia of the fifth pair on the left side for nearly twenty years, and has sought advice at many hospitals with only temporary relief. When the paroxysm is most severe the pain extends to the side of the neck and shoulder; it also causes deafness. She is obliged to go to bed, and cannot take any food, the slightest motion causing intense agony. For ten years back the paroxysms have been more severe and of longer duration. She was admitted, under the care of Dr. O'Connor, on the 13th of November, whilst in severe agony; had no sleep

the previous night; her health is otherwise good; and the teeth perfectly sound. She was ordered four drachms of the solution of valerianate of ammonia, in infusion of calumba, to be taken every three hours; a dose of compound powder of jalap directly. On the 27th she states that after a few doses of the medicine the pain diminished, and on the following day it entirely disappeared.

January 8th, 1862.—This woman became an out-patient from an attack of influenza. She states that since the 28th of November she has not had any return of pain.

Case 4.—L. C—, æt. 49, a married woman, admitted on the 20th of November. She has had nine children; has been for nearly ten years subject to severe attacks of neuralgia of the right side of the face, right eye, and the tongue. These paroxysms came on generally at eight o'clock in the morning and four in the afternoon, and as soon as she puts anything into her mouth she describes the pain as insufferable. Her health is otherwise good, and her teeth are all sound. She was ordered a draught composed of four drachms of the solution of valerianite of ammonia, in infusion of valerian, to be taken every two hours, and to be repeated oftener if the pain continues in its severity.

November 30th.—She states that since the 27th she has had sound sleep every night, and the paroxysms of pain only come on once a day, and then of much milder character. The medicine to be taken every six hours.

December 14th.—Has had no return of pain since the 1st, and now feels quite well.

Art. 33.—*On Acupuncture in Muscular Rheumatism, and on Galvanism in Rheumatic Paralysis.* By Dr. Leared, Physician to the Great Northern Hospital.

(*Medical Times and Gazette*, Nov. 30, 1861.)

"Several years ago," says Dr, Leared, "I was consulted by a lady for rheumatism, the principal seat of which appeared to be the right deltoid muscle. It was attended by considerable loss of power, and the severe and constant pain had seriously impaired the patient's health. Hearing that a number of approved remedies had been employed without effect, it occurred to me to give acupuncture a trial. Three or four needles were deeply inserted in the affected part, and allowed to remain about an hour. The result was complete cure of the pain, and the full use of the arm was soon recovered.

"Many cases apparently of the same sort of rheumatism came under my treatment when I was Physician to the Civil Hospital at Smyrna during the late war. Acupuncture was tried in one case, in which pain was also referred to the deltoid muscle, but it seemed to be of no avail. But while I think it right to mention this, it is to be added, that there was too often cause to suspect either that no pain really existed or that its relief was tardily admitted. The harassing duties of the Crimean trenches, from which these patients had recently escaped, made them sometimes unscrupulous in devising means to delay their return to duty.

"In the next instance, the details of which I give from my note-book, acupuncture was quite successful.

"A gentleman, 50 years of age, and of strong constitution, consulted me, January 20th, 1860, for rheumatism, contracted, as he believed, from sleeping in a damp bed while travelling. He had for some time suffered severe pain in the right arm and shoulder, but not immediately in the shoulder-joint. It was evident that the deltoid muscle was the part chiefly affected, but pain also extended in the course of the trapezius muscle to the back of the head. Loss of power over the arm had gradually ensued, and was so complete when I first saw him that with the scapula fixed he was incapable of raising it in the smallest degree. The temperature of the part seemed to be rather below that of the other arm, and sensation was slightly impaired.

"I prescribed the iodide of potassium in full doses, and it was continued until its specific effects were experienced, but no benefit resulted. Colchicum was also fairly tried without any benefit. Tonics and sudorifics in succession shared the same fate. In short, with the exception of temporary relief obtained from opiates, rendered necessary by the suffering and loss of rest, no internal treatment appeared to benefit the patient. In the mean time, external applications were not neglected, stimulating and narcotic liniments, containing ammonia, turpentine, tinctures of opium and aconite, &c., were diligently rubbed in. Sulphur was applied to the arm by means of a flannel bandage. The effect of heat was tried by means of bags of salt as hot as could be borne, and finally, the firing iron of Dr. Corrigan was freely employed. But the benefit afforded by any of these measures was either so trifling or so transitory that I felt almost in despair about the case.

"The signal success which attended the use of acupuncture in the case first mentioned caused me, however, to suggest it to the patient, who consented to have it tried. I now cautiously introduced three stout needles into the deltoid muscle until they touched the humerus, at about equal distances from each other, and the needles were left inserted about an hour. Almost immediate and permanent relief was obtained. The patient scarcely complained from that time of any pain in the shoulder or arm, but the paralysis continued as at first. For this state of things galvanism naturally suggested itself. I began with its milder effects, using the ordinary induction apparatus and the intermittent current, while the force of the shocks was gradually increased. The result was perfectly satisfactory; the patient was galvanized on alternate days for about a fortnight, and every application was attended by an improvement, rendered visible by the increased power of raising the arm. On February 29th (at the end of the time above named), he declared himself quite recovered, with the exception of an aching which occurred in the side of the neck when he suddenly moved it, but this comparatively trivial symptom did not leave him for a considerable time. I ascertained very lately that no relapse had taken place, and all unpleasant sensations had long disappeared."

ART. 34.—*Buzzing in the Ears, &c., produced by accumulations of hardened Wax in the Ear.* By M. TRIQUET.

(*Journ. of Pract. Med. and Surg.*; and *Medical Circular*, April 16, 1862.)

In his valuable treatise on diseases of the ear, M. Triquet relates the case of a woman in whom indurated concretions of cerumen had induced buzzing in the ears, and a degree of deafness, and in which a Parisian aurist, considering the affection to be of nervous origin, had resorted to electricity. M. Triquet soon discovered the true cause of the symptoms, and promptly relieved the patient by injections of warm water into the auditory duct. At the third injection, and without the use of any instrument, the piece of wax was suddenly expelled from the ear, the organ immediately recovered its function, and the buzzing ceased. In cases of this kind, if tepid water alone proves insufficient, M. Triquet recommends the ears to be syringed night and morning with—

Aquæ, ℥j;
Potassæ carbonat., gr. iij—xx;

the ears being stopped at night with cotton, in order that a portion of the liquid be retained. He says also, that deafness, produced by this cause, has been sometimes cured by ether, which dissolves the cerumen, and clears the passage.

ART. 35.—*Intractable case of Neuralgia cured by Oxygen.* By Dr. JOHN HOOPER, of Hoddesdon.

(*British Med. Journ.*, March 15, 1862.)

Dr. Hooper says that this is not the only case in which he has had satisfactory proof of the good effects of Dr. Birch's plan of inhaling oxygen. He also mentions a case of asthma, occurring twenty-five years ago, in which he made his patient breathe oxygen from a retort with the most satisfactory result.

CASE.—February, 1860.—I was requested by Mr. Horley, surgeon, of this place, to see William R—, æt. 40, who had been five months under his care, suffering from severe pain in his right foot. The pain during the early period of his attendance never left the patient; it was accompanied with aggravated paroxysms; the whole foot was exceedingly hot. Cold saturnine lotions afforded some relief if constantly applied. Mr. Horley gave him quinine and narcotics, with only partial relief, while under his care. He considered it a most unsatisfactory case. I examined the foot carefully; it was now quite cold, and rather blue; he was no longer troubled with the excessive heat of the part. The pain was very intense—extending over the whole sole of the foot to the toes, and on the sides over the instep, following the course of the tibial nerve from the internal ankle, through the notch in the os calcis to the division of this nerve, and along the internal and external plantar branches. He had always pain, attended by frequent excruciating paroxysms; the slightest pressure on movement of the foot so augmented his sufferings that he groaned, and occasionally screamed from the intolerable agony. The pulse was natural; the bowels

were regular. The feet were very flat, with scarcely any arch; therefore the plantar nerves were little protected from pressure. It had been a portion of his duty to carry heavy weights on his shoulders for several weeks anterior to this attack, which he considered to be the probable cause. I ordered a blister of the size of a shilling to be applied over the part where the tibial nerve bifurcates, and to remain on twenty-four hours; the epidermis was to be removed, and a powder, consisting of a grain of acetate of morphia and three grains of compound tragacanth powder, to be sprinkled over the denuded surface night and morning. A quarter of a grain of extract of belladonna was ordered to be given three times daily, the dose to be increased every seventh day until he could take one grain three times a day. Thinking there might be some irritation of the medulla oblongata, I ordered a blister to be applied to the nape of the neck, and the discharge to be kept up for three weeks. Under this plan, the tenderness became less, and the paroxysmal pain more tolerable from day to day, until he was perfectly free.

April 2nd.—He was quite well; and for ten or twelve days had been able to walk about seeking employment.

April 22nd.—I was informed he was almost as bad as ever, in consequence of having walked several miles in one day.

About May 1st, he was admitted into University College Hospital, London, where he remained about seven weeks. Numerous external and internal appliances were used experimentally, to afford relief, with varied consequences. Among them were two or three applications of blisters to the instep. Great attention was paid to his diet and general health, under which treatment he became somewhat better; and the physician under whose care he had been expressed his sorrow that he could do no more for him, and said it would be well to return to the country. He would provide him with medicine, which he could continue to take on reaching home. He did return, and I again saw him after a few days. Although the intervals of ease were longer, the paroxysms were very severe. He continued the remedies ordered by the hospital physician until October 30th, when I heard he was much worse—indeed, suffering as much as when first under my care in February. He obtained admittance into St. Thomas's Hospital about November 15th, where he continued six weeks. Numerous blisters were applied to the sole of the foot, without affording relief; the reapplications were continued nearly the whole time he was there. Other plans were adopted, equally unavailing. He left decidedly worse than when he entered.

January 20th, 1861.—I was requested to see him. He was in a most lamentable state; the pain was excruciating in the extreme. He said that, ever since the blisters healed, the skin had felt tight like a bandage, which aggravated the pain. There was no cessation to his sufferings. He pointed to a spot over the internal plantar nerve, and thought there was something which pricked him, and wished me to cut it out. I examined carefully, and could not discover the presence of any foreign body. He could not bear the foot in a pendulous position; he was obliged to creep up stairs to his bed on his hands and knees, but the effort to do so aggravated the pain so much that he screamed loud enough to be heard far from his cottage. His agony was beyond description. I have been in the profession forty-seven years, and never knew any one endure so much pain. Unless there was some remedy, he must have sunk. For the purpose of relaxing the skin and relieving pain, I ordered a strong lotion of belladonna covered with oiled skin; this was continued a whole week; it was

then removed. The feeling of a bandage no longer existed. I ordered two leeches to be applied to the part in most pain; this gave him so much ease that he repeated the application several times. Strong anodyne doses were administered twice or thrice daily.

February 1st.—The poor fellow's sufferings were so extreme that he was disheartened and inconsolable. I now determined to try the effect of inhaling oxygen. This appeared to be one of those cases in which Dr. Birch would have tried the therapeutic agency of this element: viz., "diseases otherwise incurable, eminently dangerous, or very intractable." His pulse was small and weak; he had no appetite; very little sleep; he was very pale, and exceedingly attenuated. The urine was clear.

4th.—By means of Barth's apparatus for portable oxygen gas, the oxygen was administered in the proportion of one part of oxygen to eight of atmospheric air. After inhaling two gallons in five inspirations, at intervals of five and ten minutes, his pulse became fuller and stronger; his spirits were improved; he had less pain. After the first inspiration, the blood began to mantle his cheeks.

5th.—After yesterday's inhalation, he had little pain until bedtime; but during the night and following morning the pain had been very severe. The urine was greater in quantity, very turbid, loaded with urates and phosphates.

6th.—He had been almost free from pain. The urine was turbid; his pulse was stronger; the appetite was improved.

7th.—He could bear pressure on the affected part; had no pricking sensation; he was almost free from pain.

8th, 9th, 10th.—Oxygen was used daily since the 7th. He had been free from pain. The health had been daily improving, and the appetite was excellent.

26th.—Since the 10th, oxygen had only been used every other day. He was perfectly well.

February 7th, 1862—William R— has been quite free from any ailment since February 1861; and during the larger portion of the time he has been able to follow his usual vocation as a labourer.

Art. 36.—*Case of Tetanus treated by large quantities of Alcohol.* By Dr. Hutchinson, of Carrick-on-Shannon.

(*Dublin Medical Press*; and *British Medical Journ.*, April 17, 1862.)

Case.—On July 3rd, 1861, James Powell, æt. 9, was admitted into the infirmary. Having got his left leg entangled in the wheel of a loaded cart, he had the integuments of his left leg at the inner side rubbed off for about twelve inches, leaving the tendons of the flexor muscles passing behind the malleolus quite bare for about two inches. On the tenth day the approach of tetanus was announced by the vultus tetanicus, and slight twitchings of the muscular system generally. His parents would not hear of amputation of the leg. Dr. Hutchinson had recourse to the calomel and opium, and warm baths, &c., to relieve spasm, and procure sleep, if possible. He persevered for eight days with this plan, pushing the remedies as far as he could with prudence. The spasms became general, the jaws firmly locked, and the emaciation that took place in that short time had brought him to mere skin and bone, although the nurse was enabled to get him to take plenty of nourishment by passing the handle of a tooth-brush inside his mouth, between the teeth and his cheeks, and pouring

spoonfuls of broth, milk, tea, &c., with bread broken through them; and, strange to say, the functions of the bladder and rectum went on regularly the whole time. A case that occurred in Steevens' Hospital in the year 1817, very similar, particularly in the severity of the spasms, and the rapid emaciation, differing only in being an idiopathic case (brought on by standing all day in the Liffey, fishing), flashed across my memory. Drs. Collis and Wilmot, seeing the failure of the usual treatment, had desired Dr. Hutchinson to keep his patient constantly under the full influence of alcohol, if he could do so. He accordingly drenched him with brandy, giving punch, half-and-half of it with water, and after he had swallowed seven or eight tumblers of it, the spasms and all other bad symptoms gave way, and he was free from them in three or four days, by keeping him constantly drunk during that period. The opium-treatment was discontinued entirely with him, and he had most heroic doses administered. Alcohol was tried in the present case, and the result was a perfect cure. With great difficulty the boy was got to take the first dose. He took more kindly to it afterwards. The frequency and severity of the spasms began sensibly but slowly, to diminish after the second day, and in about fourteen days he was apparently restored to health, as far as the disease was concerned. The wound healed kindly afterwards, and on the 22nd of October he was discharged cured, having become stronger and stouter than he had ever been before.

Art. 37.—*On Changes of Temperature in Tetanus.* By Dr. Wunderlich.

(*Medical Times and Gazette*, Jan. 4, 1862.)

The foreign correspondent of the 'Medical Times and Gazette,' writing from Leipzig, 10th November, 1861, among other things, says, —"Dr. Wunderlich has lately observed a case of spontaneous or rheumatic tetanus, in which the temperature exceeded the maximum that has ever yet been observed in any disease. The heat only began to increase within the last twenty-four hours before death, although the other symptoms before then were very violent, the respiration accelerated, and the pulse at 102. During the night previous to death, the temperature suddenly rose 3·3° Fahr., while the velocity of the pulse and of the respiration diminished, and the other symptoms did not increase in severity. Shortly before death the heat rose to 110·75°, the pulse being then at 180; and at the moment of death the thermometer was at 112·5°. Even after death the heat increased, and was found to be 113·8° an hour afterwards. It then slowly diminished, and 13½ hours after death it had not yet fallen to the normal average of the living body."

Art. 38.—*On Individual Remedies in Epilepsy.* By Dr. Anstie, Assistant-Physician to the Westminster Hospital, &c.

(*Proceed. of Med. Soc. of London; Medical Times and Gazette*, April 5, 1862.)

The remedies employed by Dr. Anstie were of two kinds—tonics and sedatives; of the former careful experiments were made with cod-

liver oil, quinine, and phosphorus, and also, to a certain extent, with iron; but of the effects of this last remedy no tabulated record had been kept. Cod-liver oil was employed *alone* in twelve cases among the out-patients of Westminster Hospital and Chelsea Dispensary; the disease was in every instance of the simple or "idiopathic" kind; and the following results were obtained:—Three complete failures (patients aged fourteen, twenty-six, and thirty-two respectively; in all of them the disease was of long standing); one case in which the patient, a man aged forty-four, derived no relief as far as regarded the fits, but his mental condition was improved; two cases (aged ten and twelve) which were improved, the fits being lessened in frequency, but the patients, disappeared from the author's supervision while still by no means cured; and, finally, six cases, all still under observation, in which the fits have ceased entirely, and, so far as can be seen, the disease has been cured. Out of these six cases, two were sufficiently grave to put the efficacy of the remedy to a severe test; one of them was that of a girl, aged seventeen, epileptic from infancy, and in whom the fits had for some time past been happening two or three times every day; the effect upon the facial aspect and upon the intelligence of the patient had been very serious. Cod-liver oil was employed persistently for three months, with the effect of inducing an entire cessation of the fits, and a most marked improvement in the intellectual and sensorial functions. The other case was that of a boy, aged thirteen, in whom the disease, which was hereditary, had come on six months previously. The fits were not very frequent, but were very severe; the memory was a good deal affected, and the shape of the head and the aspect of the face were far from encouraging. Nevertheless, a complete cessation of the fits soon followed the use of cod-liver oil. The remedy was persisted in for six months on account of occasional threatening symptoms; but even these have quite disappeared. The mental condition is much improved, and the boy may be pronounced cured, as far as we dare use that term at all. Quinine had been used singly in six cases; two of them had entirely resisted its influence (both these patients were women); a third had been very much benefited, the fits being much reduced in frequency, and an unpleasant numbness in the leg having disappeared. In the other three the improvement apparently amounted to cure. One of these cases, in which a very marked and peculiar aura was present, was minutely analysed, and the influence of the quinine in stopping the aura, and altogether averting the paroxysms, was plainly shown. Doubtless, local measures might have done much in this case, but they were intentionally and successfully dispensed with. All the cases treated by the author with quinine had been distinguished by the presence of some persistent local pain or numbness. Phosphorus had been tried by the author in only two cases of epilepsy, at the suggestion of his friend and colleague, Dr. Radcliffe, who has recommended its use in his book, as also that of cod-liver oil. The cases were inveterate ones, in which cod-liver oil had failed to produce any effect. The phosphorus was given in doses of five to ten drops of the phosphoretted oil of the Prussian Pharmacopœia, three times a day. The fits were not lessened in frequency, but the general condition of the patients was much im-

proved, and the miserable sense of nervous depression greatly relieved. Phosphorus ought to be extensively tried in epilepsy, and in other nervous affections. With regard to iron, the author, not having kept tabulated reports of its effects, was only able to confirm, in a general way, the popular belief in its great utility. He was in the habit of limiting its employment to cases distinguished by anæmia; and he related one or two instances of its usefulness when given in such cases. The author remarked that all these four tonics, cod-liver oil, steel, quinine, and phosphorus, were distinguished by the fact that they acted as *foods*, either to the nervous system, or the blood that nourishes that system. Looking at the success obtained by himself, and by other observers of larger experience, and also to the fact that the whole group of chronic convulsive diseases, of which epilepsy may be said to form the centre, are curable, if at all so, in nine cases out of ten, by a nutrient-tonic regimen—the author urged that there was the greatest reason for extended experiments with remedies of this class, experiments which should be patiently persisted in for months together, no other medicines being used, except aperients when necessary. The sedatives of which the author had made particular trial were opium, hyoscyamus, belladonna, and sulphate of aniline. With regard to belladonna, Dr. Anstie says that he has not thought it right to push it to the extent of producing wide dilatation of the pupil for a long time together. He has administered it in doses of one-sixth grain of the extract twice or three times a day, a quantity which is usually sufficient to produce the minor effects of the drug, namely, relief of neuralgic pain, and resolution of muscular spasms; and in these doses the results were very equivocal, and by no means encouraging. With regard to the other three sedatives, the author holds it as proved by his own experience, that in a considerable number of instances they possess the power of delaying the fit, or mitigating its severity; and for this purpose he was at present inclined to give the preference to the sulphate of aniline. This remedy he has tried repeatedly upon six epileptic patients, and also in many other cases of chronic convulsive disease. It is a most serious mistake to administer sulphate of aniline, or indeed any other sedative, in large doses, with a view to arrest or diminish convulsive muscular action. In the only two cases of epilepsy in which the author has pushed it to the extent of large doses, on account of the failure of small quantities, a serious aggravation of the fits occurred. In doses of one grain three times a day, with an additional grain to be taken immediately on the occurrence of any *prodromata* of a fit, sulphate of aniline seemed to materially benefit four patients to the extent of delaying or mitigating the paroxysm, and in three separate instances the fit seemed to have been altogether averted for a considerable time.

ART. 39.—*On the use of Sulphate of Aniline in Chorea, with remarks on Aniline.* By Dr. JAMES TURNBULL, Physician to the Liverpool Royal Infirmary.

(*Lancet*, Nov. 16, 1861.)

"In a paper," says Dr. Turnbull, "which I had the honour of reading before one of the sections of the British Association for the Advancement of Science, at the Meeting which was held at Liverpool in 1854, I adverted to the probability that an examination of the properties of the artificial alkaloids would bring to light some useful remedies. We know that they constitute a numerous class, and we should expect them to produce powerful effects on the animal economy, from their resemblance in chemical constitution to the vegetable alkaloids, amongst which we have some of our most valuable remedies, such as quinine, as well as several agents, such as strychnia, atropia, and morphia, which act most powerfully upon the nervous system. These considerations have led me to make some trials of more than one of the artificial alkaloids, though the difficulty of obtaining agents for which no use has yet been discovered has prevented me trying them as extensively as I should otherwise have done. I now proceed to state the results I have obtained from the medicinal employment of aniline, one of the best known of the artificial alkaloids. I have given the sulphate in many cases of nervous and convulsive disorder, and have found that it produces some very peculiar as well as useful effects. In the singular disease called St. Vitus's dance, or chorea, in which we have involuntary twitching movements of the muscles, I have used it with very good effect, and have treated some most severe cases successfully.

"Aniline is a volatile oily alkaloid which forms crystallizable salts with most of the acids. To the chemist it is a very interesting body, as it forms numerous compounds with other bodies, and its radicle, phenyle, connects it not only with indigo and its derivatives, but also with carbolic acid, which is the hydrated oxide of phenyle, and with benzoyle and salicyle. There are various processes by which it may be obtained. From indigo it may be obtained by distilling it alone, or with potass; or it may be obtained by heating isatine with potass. It is also present in coal-tar, from which it is now extensively prepared for the purpose of forming certain dyes.

"Two circumstances led me to make trial of aniline as a medicinal agent—the fact of its being an alkaloid, from which I inferred that it would act energetically on the animal economy, and, probably, on the nervous system, and the fact of its being present in Dippel's animal oil—an old antispasmodic remedy. There are other alkaloids in this oil—pyridine, picoline, lutidine, and collidine—to which its properties may be equally due; but the fact of aniline being the chief of them was one of the reasons that led me to make a trial of the sulphate of this artificial alkaloid."

CASE 1.—*Chorea, with very violent twitching movements, loss of speech, &c.; unsuccessful treatment by purgatives, steel, sulphate of zinc, cod-liver*

oil, shower-bath, &c.; rapid recovery by means of sulphate of aniline.—Ann P——, a girl æt. 13, was admitted into the Liverpool Royal Infirmary under my care on the 7th of June, 1860, on account of the usual involuntary twitching movements which characterise St. Vitus's dance, and which affected all the limbs. She had been ill for three months. She was first treated with purgatives, and then successively with iodide of iron, cod-liver oil, the shower-bath, which is often of great service, and lastly, with the sulphate of zinc. None of these remedies, however, appeared to be of any use. On the contrary, she got worse, and the violence of the convulsive movements became so great, that she was confined to her bed, in which it was a difficult matter to fasten her. She also lost the control of the muscles of the tongue so completely that she was unable to speak.

On the 6th of August, two months after admission, and five from the commencement of her illness, the movements had become so constant, tossing her about in all directions, that they threatened to exhaust the vital powers, as sometimes happens in this singular disease, and I thought the case, therefore, a fit one, after having used the ordinary means, to make trial of a new remedy. One grain of the sulphate of aniline was ordered to be taken in solution, with a little sulphuric acid, three times a day. In three days there was a decided diminution in the violence of the movements, and afterwards a gradual improvement. The dose was increased to two grains, and it then caused some depression and a peculiar blueness of the lips, which I have since remarked in several other cases. The medicine was omitted for two days, and resumed in the smaller dose.

On the 30th of August she had so far recovered, that she could walk well. She had also regained the control of the muscles of the tongue, so that she could put it out, and she had recovered her power of speech.

On the 10th of September she had entire control of the limbs. They were almost perfectly still, and she was considered cured.

Case 2.—*Chorea affecting the left side chiefly; treatment by purgatives and sulphate of aniline; perfect recovery in twenty-one days.*—Mary Ann H——, a rather delicate looking young woman, æt. 18, was admitted on the 30th of August, while the previous case was under treatment. She had the movements in all the limbs, but the left side was most affected. She had not menstruated for twelve months, and the bowels were constipated. They were first opened freely by compound jalap powder and calomel, and then a grain of sulphate of aniline was ordered to be taken three times a day. It was afterwards increased to one grain and a half. She recovered rapidly, and the same blue appearance of the lips was developed which had been remarked in the preceding case.

On the 20th of September she had scarcely any involuntary movement, and she was so well, and her hands so steady, that she could knit crochet-work. The catamenia being, however, still absent, decoction of aloes, with steel mixture, was prescribed instead of the sulphate of aniline, and she became an out-patient.

Case 3.—*Chorea with twitching movements in the face and limbs, brought on by a fright; treatment by sulphate of aniline, and recovery in fourteen days.*—Martha G——, a healthy looking girl, æt. 17, residing at Birkenhead, was admitted December 20th, 1860, with very violent twitching movements in all the limbs as well as the face. A month previous she had a fright, which brought on the involuntary twitching at first in the right side. She had been under medical treatment from the commencement of the attack, but had, notwithstanding, been getting gradually worse. All the functions were natural, the bowels and the cata-

menia being regular. A grain of sulphate of aniline was ordered thrice a day, as in the previous cases.

On the 24th there was less motion, and the dose was increased to two grains. The movements gradually subsided, and on the 3rd of January she had resumed the use of her needle. She then wished to go out, considering herself quite well.

CASE 4.—*Chorea affecting the arms, legs, and muscles of the face; treatment by purgatives and sulphate of aniline; recovery.*—Margaret M'C——, a stout, healthy looking girl, æt. 11, was admitted on the 27th of April, 1861, with twitching movements in nearly all the voluntary muscles. She had been ill ten days, but had also had a very severe attack about two years previous, for which she had been treated in the infirmary. The sulphate of aniline was prescribed in the dose of a grain and a half three times a day. The symptoms did not diminish at first, and on the 5th of May the movements were very violent and uncontrollable, and she was in bed. A purgative powder was ordered. The following day the lips, the face, and even the hands were of a deeper blue colour than I have observed in any other case. This had arisen from double the proper dose having by mistake been administered. There was a diminution, however, in the movements, and she was out of bed and running about. The movements gradually subsided, and on the 6th of June there was scarcely any jerking.

CASE 5.—*Chorea with the usual symptoms; treatment with sulphate of aniline and a purgative; recovery.*—Mary Jane W——, æt. 13, was admitted on the 21st of May, 1861, with jerking movements affecting chiefly the right arm and leg. She had been ill three months, and had suffered from a similar attack, for which she had been under my care two years before. She was healthy looking, but the muscular tissue was soft. The tongue was not clean. A purgative powder, with scammony, rhubarb, calomel, and sulphate of potass, was ordered. Two days afterwards the movements had not subsided, though the bowels had been freely opened. Sulphate of aniline was ordered in the dose of one grain and a half three times a day. Under this treatment the movements gradually subsided, and on the 6th of June there was scarcely any twitching.

On the 21st, she was discharged quite cured.

CASE 6.—*Chorea with convulsive movements and partial loss of power in the lower limbs; inability to speak; rapid recovery under treatment with sulphate of aniline.*—Elizabeth L——, æt. 16, a thin and rather delicate girl, was admitted on the 22nd of April, 1861. The case illustrated the connexion between chorea and rheumatism, for she had suffered from a severe attack of rheumatic fever eight months previous. She had begun six weeks before admission to have involuntary movements in the legs, and during all that time she had been under treatment at a dispensary. She had got gradually worse, however, so much so that she was carried into the infirmary, having lost the power of the limbs so completely, that she was unable to stand. She had twitching movements in the legs, as well as the arms, and the face was also very much affected. When she attempted to speak, a peculiar chucking sound was produced, and she could scarcely say "Yes" or "No." The tongue was not quite clean, but the bowels were regular; the pulse was 100. One grain and a half of sulphate of aniline was prescribed three times a day, and a dose of compound jalap powder and calomel.

On the 24th she was considerably better, and able to speak distinctly.

On the 29th she was able to walk out, and the involuntary movements had greatly subsided.

On the 9th of May the movements had almost entirely left her, and she might have been discharged if it had not been considered desirable to retain her in order that her general health might be improved by good diet and porter, so as to prevent relapse.

On the 20th there was scarcely any trace of the original complaint, but she had some rheumatic pain and swelling in one foot and wrist. Quinine with iron was ordered for this, and under this treatment she got quite well.

Dr. Turnbull refers to two cases of chorea under the care of his colleagues, Dr. Inman and Dr. Vose, in which aniline appeared to produce a very decided beneficial effect. He thinks, also, that this medicine may be of service in other chronic nervous maladies of a spasmodic convulsive nature, and says that he has already tried it in several cases of epilepsy, in two instances with advantage. With respect to the physiological action, he says:

"As we know that the alkaloids and their salts are almost identical in their effects, we can scarcely doubt that the physiological action of aniline and that of the sulphate are the same, or very nearly so. Gmelin states that half a gramme of aniline introduced, together with a gramme and a half of water, into the stomach of a rabbit, caused strong clonic cramps, then laborious breathing, loss of strength, dilated pupils, and inflammation of the mucous membrane of the mouth.

"Dr. Schuchardt arrived at the following results from a series of experiments:—Aniline may act injuriously on the animal organism, and in large doses may even cause death. Frogs introduced into a weak solution containing aniline died in periods varying from a quarter of an hour to two hours and a half, and death was also caused by the introduction of aniline into the mouth or into a wound in the back. Rabbits were also poisoned by this substance, a small animal being killed by fifty drops in six hours and a quarter, and a larger one by a hundred drops in four hours. In all the animals experimented upon, violent clonic and tonic spasms ensued after the application of the aniline, and continued almost uninterruptedly till death. There was also loss of sensibility, commencing at the lower extremities, and extending to the upper; the temperature of the body was also reduced. Wherever the aniline was applied locally, as in a wound of the back, on the stomach, on the posterior part of the tongue, or on the conjunctiva, appearances of irritation were observed, which are probably connected with the power possessed by aniline of coagulating albumen. The aniline was never detected in the urine, and it is probable that this substance is eliminated from the body rather by the organs of respiration than by the kidneys.

"I gave to a dog, about three months old, half a drachm of the sulphate of aniline, and the effects produced corresponded in many respects with those observed by Dr. Schuchardt. About two hours and a half after it was given, the animal vomited, and an hour later it was purged. It became dull, weak, and tremulous; the pulse became very rapid; the pulsations of the heart were counted 148 in

a minute, and the breathing was somewhat laboured. The feet were cold, the tongue of a blue colour, and the hind legs almost paralysed. Five hours after, it was very weak, but recovering, and the next day it had recovered appetite and liveliness.

"The sulphate of aniline does not seem to have the same local irritating effect that the aniline itself produces. My own observation would lead me to believe that it has a direct action on the nervous system. The most striking effect, however, which it produces is the visible alteration in the colour of the lips and complexion. A peculiar blueness of the lips, the tongue, and the nails, and a dusky appearance of the complexion, have been observed in a greater or less degree in most of the cases where a sufficient dose has been taken continuously for any considerable time. It is a temporary effect which has always gone off within twenty-four hours when the remedy has been omitted. In one case, where an overdose of not more than three or four grains was taken, the blueness in the hands extended above the wrists. There has been some depression and headache in some of these cases, which symptoms have, however, gone off when the medicine has been discontinued. The blue appearance, though like that which occurs in chronic bronchitis, does not seem to arise from any interference with the respiratory function. This change of colour is more interesting from the fact, that we have few examples of parallel effects resulting from the exhibition of medicinal agents. The permanent discoloration of the skin which sometimes arises from the long-continued exhibition of nitrate of silver is scarcely a parallel case, for here the oxide of silver is deposited in the skin from the remedy being decomposed by the action of the light; whereas the blueness from the sulphate of aniline appears to arise from a colouring matter being formed in the blood, which is most visible in parts like the lips, where there is a thin mucous covering. The effect of madder-root (which is used as a dye) in colouring the bones of animals fed upon it of a red colour, is more nearly a parallel case; but the effect of the carbazotic acid and its salts—which are of a deep yellow colour, and produce a similar colour of the skin, as if the individual were artificially jaundiced—is the example which most nearly resembles that of the colouring influence of sulphate of aniline. This power which carbazotic acid has of colouring yellow, not only the tissues but also the fluids of the body, was discovered by my friend, Dr. Moffat; and it is worthy of observation that both aniline and carbazotic acid are derivatives from the radicle phenyle.

"If the blue colour produced by sulphate of aniline does not arise from any interference with respiration, we have to inquire from what other cause it may arise. I believe it is from the sulphate of aniline being oxidized in the blood, and producing in it a blue dye. Gmelin states a fact which seems to prove this, namely, that when aqueous sulphate of aniline is boiled with peroxide of lead, an oxidizing agent, carbolic acid, is evolved, and a blue liquid produced which smells of formic acid, and afterwards becomes colourless, and gives off ammonia when heated with potass. Aniline, it has also been stated, is a derivative from indigo; and it has relations to many other dyes, the mauve dye being made from the sulphate of aniline by oxidizing it

with bichromate of potass. It is, therefore, probable that the temporary blueness arises from a colouring matter, or dye, being formed from oxidation of the aniline in the blood."

Art. 40.—*On the Treatment of Chorea.*
By Dr. Wilks, Assist. Phys. to Guy's Hospital, &c.

(*Medical Times and Gazette*, Mar. 22, 1862.)

"It is well known," we quote from a clinical lecture, "that there are fifty remedies against this disorder, and even more than this number may be discovered, if it be worth while to collect them from medical writings; and yet those who have not the opportunity of witnessing the practice of others are well satisfied with their own particular remedy as the best, in consequence of having generally found it successful. Thus, scarcely a week passes but we hear of some new medicine which will infallibly cure this disease, and it is even worth the time of the British Association to discuss the merits of some novel anti-choreal drug. All the while, the believers in iron, zinc, belladonna, or galvanism, still exist. In Guy's Hospital, iron was superseded by zinc; and then, according to Addison and Bird, both were inferior to galvanism. This, however, did not take a year to be forgotten, although lately revived by the French physicians.

"Now, we think it would be tolerably evident to an unprofessional person, or to one unacquainted with the disease in question, that where a malady can be cured by so many remedies, it may be very well left to itself, and can be placed in the same category as whooping-cough, and many other disorders which tend to a spontaneous cure. We had almost arrived at this conclusion when visiting some years ago the Paris hospitals, and discovering that at one time iron was the remedy; at another, no drug could equal strong coffee; and at another, that certain gymnastic movements, on the plan adopted at the Hôpital des Enfans Malades, were quite sufficient to cure the disease.

"It would appear to be true that tonics are useful, and that it is important to correct any morbid state of the alimentary canal. With this idea, the late Dr. Hughes had a favorite and very useful remedy, consisting of rhubarb steeped in port-wine. All other medicines acting on these principles are beneficial, and we generally administer them. But, in order to impress upon students the importance of attempting a rational treatment of disease, so that they may know with what purpose they are administering medicines, we have for some years past taken bad cases of chorea into the hospital, so that students might witness for themselves the fact of the spontaneous cure of the disease, and in order also to disabuse their minds of the false notion that iron and zinc *cure* the disease by an antidotal sort of action.

"This result, we may remark, can scarcely be obtained except in a hospital, for the cure seems to depend upon the removal of all those circumstances which may have excited the disease at the onset, and then perpetuated it, as well as upon the controlling the patient by the stricter discipline of an institution and the more correct regimen.

Thus it is, that although amongst our out-patients recovery will ensue under the ordinary treatment in a certain time, yet this is often protracted, and sometimes even no benefit at all results. Under these circumstances, if the patient be admitted into the hospital, a change speedily takes place. We should state, that as the nurses are staunch believers in physic, we have been obliged to order the children a little coloured or sweet water. We append a few cases, in order to prove our position, that chorea is a disease which tends to get well of itself, but is assisted in the process by tonic remedies, especially of the mineral kind. This we regard as absolutely certain, and appears, indeed, to be the only explanation of the numberless remedies which are in vogue to cure this disease."

Case 1.—A girl, æt. 15, had been ailing a month with symptoms of severe chorea, and had got so much worse during the last week that she was unable to stand, and was obliged to keep her bed. Her medical adviser, a very good practitioner, had treated her up to this time without relief. On admission, it was seen to be as bad a case as is usually witnessed. She was obliged to be placed in bed with sides to it, for fear of her falling out. She was in constant movement, throwing her limbs about, the skin of which was knocked off on several parts, owing to the violence of the jactitation. She was scarcely able to speak. She had become very thin. She was ordered a little syrup and water to be taken three times a day. After a short period she began to improve, was soon able to sit up in bed, then to walk, and finally she left the hospital quite well, exactly four weeks after admission; the usual time, it may be said, when the most highly-vaunted remedies are said to cure.

Case 2.—Sophia B., æt. 7, admitted May 6th, 1858. Symptoms of chorea had been gradually coming on for two months, but she had still been able to walk about and go to school. Two weeks ago she fell down, when all the symptoms became worse. On admission, she was unable to stand, the jactitation was general, so that she was obliged to keep her bed. A slight systolic bruit existed. She was ordered Syr. aurantii ʒss., tr. cardam. c. ♏ v., aq. ʒss. ter die.

On May 11th, a little better. On 14th, much better. After this she still improved, and on the 28th all movements had ceased. She then left the hospital, but was directed to take some steel mixture with her, thinking it might be of service, and not then interfering with the natural course of the disease.

Case 3.—Maria H., æt. 8, came into the hospital with the last-named patient, and left about the same time. Three weeks ago choreal symptoms came on without an assignable cause. A slight systolic murmur existed. Jactitations considerable, so as to prevent her doing anything, although she did not keep her bed. She was a very intelligent child, but her father was a lunatic. She took no medicine, and in three weeks was quite well.

Case 4.—Emily J., æt. 14. She had been ill two years with attacks of chorea, and had been an out-patient twelve weeks, taking several remedies—as zinc, iron, &c., without benefit. She was advised to enter the hospital on January 12th, 1859. She took Syr. aurantii ʒss., aq. ℥j. ter die, and at once began to improve. On February 1st, she walked about, and was almost steady. In two more weeks she left well.

Art. 41.—*On Rabies Canina.* By M. Boudin.

(*Journ. de Méd. et Chir. Prat.*, Oct., 1861.)

In a memoir presented to the Academy of Medicine at Paris, on the occasion of a vacancy in the section of public hygiene, M. Boudin arrives at these conclusions:

1. The number of dogs in Europe may be estimated at more than twelve millions; the annual value of their food at more than twenty millions sterling; the yearly number of victims from rabies at several hundreds.

2. In the immense majority of cases, rabies is propagated by the bite of mad animals; in some circumstances, it appears to be also transmissible by the mere licking of the wound or excoriated skin.

3. Among the innumerable documents published on the matter, not a single case exists capable of constituting a serious scientific proof of spontaneous canine rabies.

4. Were the spontaneity of canine rabies rigorously demonstrated, it would still be so rare that it would scarcely be necessary to take account of it in sanitary police regulations.

5. The old hypothesis, recently revived, which ascribes canine rabies to the non-gratification of the generative instinct, will not bear the least examination.

6. The influence attributed to the temperature and dampness of the air on the frequency of rabies is in contradiction with facts.

7. The alleged epizootics of rabies, described by authors, are naught but multipled cases of communicated rabies, and the word epizooty, in these cases, ought to be erased from scientific language.

8. Science possesses no positive data on the extreme limits of the period of incubation of rabies in the human species; this period appears to be of seven months' duration in the dog (according to Mr. Youatt), and of fourteen months and a half in the horse.

9. No really pathognomic sign exists of rabies in the dog. Hydrophobia, properly so-called, is completely absent in canine madness. The special howling bark appears to be of great value in the diagnosis of rabies.

10. Science possesses no certain data concerning the alimentary injuriousness or innocuousness of the flesh of mad animals, of the milk of cows and of goats bitten by animals affected with rabies.

In reference to measures of public hygiene and of administrative police, M. Boudin's opinion is as follows:

1. The effect of the tax on dogs is a diminution of the number of these animals, and consequently of the chances of rabies in the canine species and among men.

2. As rabies may manifest itself all the year round, the administrative supervision of animals should likewise be exercised throughout the year, and the muzzling of dogs should never be discontinued.

3. Experience having demonstrated the frequency of bites inflicted by muzzled dogs (20 times out of 156), the muzzle and its mode of application should be vigilantly watched by the authorities.

4. Dogs, bitten by rabid dogs or those suspected of being so, if not immediately killed, should be sequestered for a time at least equal to the known maximum of the duration of the period of incubation.

Art. 42.—*On Sempstresses' Palsy.* By Dr. Van Holsbeck.

(*Bull. Gén. de Thér.*, July 16, 1861; and *Brit. Med. Journal*, Oct. 12, 1861.)

This affection, which has a certain degree of analogy to writer's cramp or "scribe palsy," consists in an entire or partial loss of sensation at the end of the right thumb and index finger, with loss of power to hold the needle. Sometimes, but rarely, the finger and thumb of the left hand are similarly affected. The fingers frequently diminish in volume, and more or less rapidly lose the power of contraction. The muscles especially affected are the opponens pollicis, the flexor brevis and adductor pollicis, the first two lumbricales, and the adductor indicis. At the same time the skin of the palmar surface of the thumb and index finger, especially at their tips, becomes insensible; and the anæsthesia frequently also affects the middle finger. This paralysis rarely appears suddenly. There is first cutaneous anæsthesia; then the electro-cutaneous sensibility is diminished or abolished, and the electro-muscular contractibility more or less diminished. The most preferable means for the treatment of this affection is electrization.

Art. 43.—*On Diphtheritic Paralysis.*
By M. Roger, Phys. to the Hôpital des Enfans Malades, Paris.

(*Gaz. Heb. de Méd. et Chir.*, Dec. 13, 1861.)

M. Roger states that during the year 1860 there occurred 210 cases of diphtheria at the Hôpital des Enfans, and that paralytic symptoms followed in 31 cases. The proportion was really greater, inasmuch as several of the children were removed from the hospital prior to the period at which consecutive paralysis is usually developed, while others died before the period had arrived. M. Roger believes that the proportion of these cases is really a fourth or a third. These secondary paralyses are as rare in the other acute diseases of children as they are common in diphtheria. Thus, in 1860, among 61 cases of angina simplex, 12 of typhoid fever, 33 of rubeola, 12 of scarlatina, 4 of variola, and 24 of pneumonia, not an instance of secondary paralysis occurred; and the same negative results were observed in M. Blache's wards. Of 40 cases of diphtheritic paralysis which have come under M. Roger's notice, the most frequent ages at which they appeared were from four to six, there being 21 female to 17 male infants. In almost all cases the paralysis has commenced at the pharynx and velum palati, as exhibited by the nasal twang and dysphagia. The establishment of a relationship between its occurrence and the gravity of the primary disease is not easy, although it would seem to be a proof of a greater amount of blood-poisoning. But, in fact, it is in the milder cases that these paralyses are found of most frequent occur-

rence; but this may be owing to the rapidity with which death usually occurs in diphtheria. As to the relationship of the paralysis to albuminuria, often met with in diphtheria, M. Roger has not sufficiently examined the point, beyond being able to state that albuminuria is at all events not an essential concomitant. The usual period of the appearance of the paralysis is from the fourth to the eighth day, but sometimes dysphagia is observed from the beginning, while at others these secondary symptoms occur much later. Their mean duration is about a month. As a general rule, the prognosis is not unfavorable although in exceptional cases death has resulted from paralysis of the respiratory muscles, or sudden suffocation. For treatment, M. Roger recommends especially tonics, iron, sulphurous preparations, and the application of electricity.

ART. 44.—*A case of Complete General Paralysis cured by means of the Continuous Galvanic Current.* By Mr. HARRY LOBB.

(*Medical Circular*, Dec. 18, 1861.)

CASE.—Mrs. L—— was confined early in January, 1861, and suffered from most profuse hæmorrhage—this brought her nearly to death's door, and it was only from the constant watchfulness and attention of her husband, a physician, aided by the advice of Sir Charles Locock, that she rallied so far that her life was out of danger, but left in a state of extreme prostration, and totally paralysed, with the exception of the head—so much so, that she was unaware when her motions passed, and when her bladder was emptied; she also had some difficulty in swallowing, from partial paralysis of the pharynx.

On May 9th, sixteen weeks after her confinement, I, by the advice of Sir Charles Locock, was consulted by Dr. L. upon the case, and upon seeing Mrs. L., gave a decided and most favorable prognosis; for, looking upon the paralysis as the result of extreme prostration from loss of blood, and not considering that there was any actual organic disease, merely loss of nervous energy from insufficient nutrition, I looked upon the continuous galvanic current as specific.

I found upon examination total loss of voluntary motion in both arms and legs,—not the slightest power whatever; loss of muscular consciousness, so that she was unaware where her legs and arms lay unless she saw them; numbness to a great extent in all the limbs, and a great sense of weight in the abdomen; no power whatever over the sphincters, and unconscious of the calls of nature. Pulse extremely feeble and very slow, seldom rising to forty beats in the minute. The treatment I recommended was constant nutritious food, wine or beer, to be administered every two hours, and at night when awake. I find this necessary in all cases of extreme prostration, tending much to induce sleep. The application of one of Pulvermacher's galvanic bands, to be worn down the spine, and across the abdomen, and the application, twice daily, for half an hour at a time, of a continuous galvanic current of 120 elements—direct current, that is to say, from the spine to the limbs.

On May 26th, eight days after she had commenced the treatment by galvanism, Dr. L. writes to say, that "you will be pleased to hear that I can send you an improved account of Mrs. L., and that she herself has great confidence in the powers of the galvanic process you kindly suggested;

she can lift both arms, and has more feeling in the fingers, which last, indeed, are always tingling instead of being insensible; the abdominal muscles have gained much power; she is also conscious now when the bowels act, and has the natural feeling when the bladder wants to be evacuated. The thighs continue to be heavy, and are very tender, so are the feet, which last, however, have taken to tingling, which she hopes is a good sign."

It must be remembered that this is the result of eight days' treatment, after sixteen weeks with no improvement. I always notice that tingling is a satisfactory symptom in paralysis.

June 2nd, Dr. L. writes, "There has not been such progress as during the first week; the legs and feet are so utterly powerless, that there must be some time before we can hope to make any impression upon them; the feet are now so tender and painful, that she can hardly bear them to be touched."

12th.—"The use of the arms, so far as movements are concerned, is nearly restored; she can, however, not bear the slightest weight upon them, and the fingers refuse still to hold a spoon, &c. The weight in the abdomen has gone, the weight in the thighs is much less, as also is the tenderness everywhere. She can draw up both legs when in the recumbent position, though she cannot retain them so; she can also swing the legs when they hang in a sitting posture; the feet are very powerless, and are drawn at the ankles by the tendons of the heel, and drop somewhat like talipes; she has not the smallest power of standing, not an approach to it, still I think even these—the legs and feet—have improved somewhat during the last week; she is greatly better in health." . . . . "I am using both batteries, as you suggested, an hour twice a day, divided between arms, thighs, and legs; she feels it now sharply at times in the arms and at the ankles."

July 3rd.—Mrs. L., has steadily improved since I last wrote. I was enabled to move her to her father's house more than a fortnight ago—she was carried down stairs in a sling and placed in an easy carriage, was none the worse for the ride, is still staying there, and has gained much by the change; she has quite recovered the use of her arms, even so as to raise her own weight by resting on them, whilst the nimblest movements of the fingers are restored, so as to let her do needlework, knitting, &c., she cannot as yet stand, but she means to try in a day or two; all mere lifting movements of the legs she can manage very tolerably, and can shift their position as she pleases."

28th.—" . . . but she still cannot walk, and can hardly stand when leaning on a chair; in all other parts the paralysis has gone. . . . the pulse is still never more than forty-four in a minute. . . . . You would, I think, be surprised as well as pleased to see how wonderfully Mrs. L., has improved under your treatment; in fact, excepting that she can neither walk nor stand, and the pulse so low, there is nothing morbid discoverable in her. Sir Charles Locock saw her the day before yesterday; he was delighted to find her so well."

August 9th.—"She can now walk about without any assistance, and can get up and down stairs with the aid of an arm; the feet are still tender, and the movements of the legs not very nimble, but every day brings an improvement in these points. Her general health and strength keep pace with the local amendment. I should think you can seldom have had a case which so undeniably exhibits the value of the 'continuous galvanic current,' as recommended by you."

This is the last letter I received from Dr. L. Mrs. L. has perfectly and completely recovered, and is now quite well.

Thus, in three months, this most interesting and distressing case of complete general paralysis was perfectly cured with the aid of the "continuous galvanic current."

(B) CONCERNING THE RESPIRATORY SYSTEM.

ART. 45.—*On Gangrenous Abscess of the Lung.* By Dr. C. J. B. WILLIAMS.

(*Lancet*, April 12, 1862.)

In one of the Lambian Lectures recently delivered before the Royal College of Physicians of London, speaking of gangrenous abscess of the lungs, Dr. Williams says: "This is one of the most serious consequences of inflammation. Contrary to Laennec, I consider it due to inflammation producing an obstruction in the circulation and nutrition of some parts of the lung. This I take to be the cause of this gangrenous destruction, and not the existence of an intense and peculiar inflammatory action. I have here the notes of the case of a gentleman who was swimming in the Thames, and got beyond his distance. He became exhausted and severely chilled, and was attacked with pneumonia. When I saw him, there was a marked degree of fever and exhaustion, and fetid expectoration. This is a remarkable symptom, in respect to which there is an observation which I wish to make on a point of diagnostic value. When first expectorated, the matter expelled is abominably offensive; but when it has accumulated for a short time in the sputorium, it acquires rather a pleasant odour. I have often pointed this out to students.* The narrow boundary which divides perfumes from the most unpleasant effluvia is very well known, and some choice and agreeable scents are manufactured by inducing chemical change in very rank and foul-smelling substances. The peculiar and pleasant smell which this expectorated matter acquires after a short time is in no small measure diagnostic, and in itself points to the character of the disease; the odour is very nearly that of cowslips. Sometimes sloughy matter is expectorated—actual gangrenous *débris* of lung-tissue. This was the case with the above patient, who made a good recovery, however, by the end of about six months.

"Another symptom worthy to be noted in the cases of gangrenous abscess of the lung is the violently convulsive cough. This cough is comparable, in its violent convulsive efforts, with that of whooping-cough. It is characteristic of the energy with which Nature endeavours to get rid of the offensive matter. I mention whooping-cough, and I may say that the parallel is one which may be borne out. I

* "The sputum of empyema with perforation has precisely the smell of rotten eggs which belongs to decomposed pus, in common with other matters containing sulphuretted hydrogen, and completely different from the faint and peculiar odour here described."

believe it also to be the result of a poison, and that the disease is best treated by remedies which attack the poison where its energy is located —in the trachea and air-tubes. So, in the intestinal tube, an analogy may be observed, if we refer to the case of dysentery. A characteristic feature is the excessive and violent straining of the intestinal canal to get rid of the poisonous matter.

"The treatment of gangrenous abscess of the lung may be antiseptic, in order to counteract putrescence, and directed to allay the violence of the cough. I have frequently employed the dilute nitro-muriatic acid in doses of from forty to sixty minims several times a day, with the effect of counteracting and preventing the spread of the fœtor. It is better to give the acid in quite full doses, and larger doses than the above may be given by combining it with glycerine, which has the effect of sheathing the acid, and is itself antiseptic. Fumigations may be employed with advantage, and especially of creasote, or the inhalations of creasote and chloroform. It is necessary to keep up the nutrition of the system.

"In the period of my practice, from which I am extracting for the purposes of these lectures, I have noted eleven cases of gangrenous abscess of the lung: three were fatal, and eight were followed by recovery. Of these eight, seven made perfect recoveries, and are living still. One of the cases is remarkable—that of a patient aged seventy. It was a very aggravated case. There was intense fœtor, and great exhaustion from the poison and the violence of the cough. The case was carefully watched and treated, and the patient recovered, and is now alive, and in the enjoyment of singularly sound health. Another case was, if possible, one which in the outset was of worse augury. Fetid matter was discharged in large quantities, and a considerable cavity formed; but the stomach was stout, and abundance of good food was taken, and with the help of active remedial and hygienic measures the patient recovered. Two years passed; her health was fully restored, and she is now quite well. Then, as to the fatal cases. One was a case which I saw with Mr. Bateman: a clergyman, aged fifty-six. The attack came on as the result of anxiety, exposure, and chill. There was cough, pain, and expectoration, which soon became fetid. From the character of these symptoms, and the pain and dyspnœa on the right side, I diagnosed abscess of the lower lobe of the right lung; from the intensity of the pain, I suspected perforation. Subsequently, a spontaneous opening took place in the side, and the patient's strength gave way, and he sank. The second case was that of a lady, who was very unmanageable and difficult to treat. She did not die from the immediate effects of the disease; but after twelve months, during which the abscess had pursued a tedious course, she died exhausted. She could not take cod-liver oil; she resisted the use of various remedies which were advisable, and her digestive powers were very low. This is a serious source of difficulty. The third case illustrates another source of non-success, which I had occasion also to note lately in a patient, who was under the care of Dr. Blakiston, of Hastings, and whom I had expected to do well, but who did not mend. The cough continued, and I suspected something underneath. Sugar was found in the urine. This was a cause for

not rallying. Where there is organic disease, patients do not rally. A lady whom I have seen lately illustrates a case of imperfect success —that condition in which convalescence is prolonged, but perfect restoration not obtained. This was a lady who had fetid abscess of the lung twenty years ago, which was apparently cured at the time, but troublesome cough remained, and the abscess has now more than once recurred. This is probably due to the low situation of the abscess. The upper part heals, and the symptoms cease; but after a time, fresh expectoration occurs, and the abscess bursts out again."

ART. 46.—*External Application of Iodine to remove plastic exudations in Pleurisy.* By M. DELIOUX.

(*Gaz. Hebd. de Méd. et Chir.*, Sept. 30, 1861.)

M. Delioux uses, for the removal of plastic exudations following pleurisy, frictions with an ointment composed of iodine, two parts, iodide of potassium, eight parts, and lard, thirty parts. The skin being made perfectly clean, friction with this ointment must be made over the affected part for five minutes every morning and evening; a layer of cotton-wadding is then applied, and covered by oiled silk, the whole being secured by a bandage round the body. The application produces more or less cutaneous irritation, and, where this is severe, the remedy must be discontinued, but for as short a time as possible. M. Delioux has employed this treatment with success in a score of cases of intra-pleural exudation, some dependent on acute pleurisy, others being instances of a chronic exudative pleurisy. The duration of the treatment has varied from fifteen days to two months; in the acute cases, from fifteen to twenty days have generally been sufficient for the removal of the false membranes. The iodine thus applied is absorbed, M. Delioux and M. Castain finding it in the urine.

ART. 47.—*Case of Empyema, in which a "Drainage Tube" was inserted after Paracentesis Thoracis.* By Dr. FINCHAM, Physician to the Westminster Hospital.

(*Medical Times and Gazette*, April 5, 1862.)

CASE.—F. O—, æt. 17, whilst serving on board a Queen's ship in Cork Harbour, having been previously in excellent health, was suddenly seized on August 8th, 1860, with symptoms of acute pleurisy on the right side. He was bled, blistered, and took pills, probably mercurial. After remaining on board under treatment for about six weeks, he was sent to London, and on the 26th of the following month he was admitted, under Dr. Fincham's care, into the Westminster Hospital. At this time he was somewhat emaciated; his face flushed; the skin warm and perspiring; his appetite fair; the urine high-coloured and free from albumen; the pulse 140; the respirations 40; his chief complaint was of shortness of breath, of cough, and of some palpitation of the heart. He expectorated a small quantity of colourless mucus. He lay habitually on the right side, his shoulders slightly raised, the effect of which was much soreness of the right hip; this interfered a good deal with his rest

and sleep. As to the physical signs, when he lay on his back, the right side anteriorly was markedly resonant as low as the seventh rib; the same resonance extending backwards to a line corresponding with the anterior edge of the axillary region. Over the whole resonant space vesicular breathing was replaced by a loud metallic ring, accompanying inspiration, voice, and cough. Over the left side of the chest there was natural resonance, with coarse breathing. The heart could be seen and felt over a larger extent than natural, with its apex beating in the sixth intercostal space, about an inch to the left of the nipple. When the patient was made to sit up, and examined from behind, distinct enlargement of the right side was apparent both posteriorly and laterally, with diminished mobility of the ribs, and slight bulging of the intercostal spaces. On measurement, it was found one and a quarter inch larger than the left. On percussion, the infra-axillary and infra-scapular regions were completely dull, whilst the scapular and axillary, especially the former, were far more resonant than natural. Vocal fremitus was absent from the dull portion, and the breathing silent; whilst above, especially at the angle of the scapula, there was the same metallic ring as in front. There was, moreover, the most distinct splashing sound on succussion, and the situation of resonance and dulness varied according to the posture of the patient. The abdomen was considerably distended, and dull on percussion on the right side as low as the umbilicus. The case was clearly one of air and fluid in the cavity of the right chest; the only obscurity about it being the source of the air. There was not the least indication of any communication with a bronchial tube arising from ulceration, whether tubercular or otherwise, for no pus had at any time been spat up; nor was the air the result of decomposition, otherwise there would have been an escape of fetid gas or pus, or both, when the chest was opened; nothing, however, of the kind took place. It was conjectured by the author that the presence of air was occasioned by the rupture of an air-cell, possibly from coughing, and that the air escaped both into the cavity of the chest, and also into the cellular tissue generally. This conjecture was based upon the fact that, a few days after his admission, distinct crepitation could be felt under the skin of the abdomen, at a spot about an inch to the left of the umbilicus. As regards the progress of the case, the patient continued much the same for about three weeks, when the respiration and circulation became much more embarrassed. Mr. Hillman was, therefore, requested to puncture the chest in the sixth intercostal space, in the usual situation, the result being the evacuation of seven pints and a half of thin pus without fetor, to the manifest and immediate relief of the patient. The relief, however, was only temporary, and in about a fortnight the general symptoms were as urgent as before the operation, whilst the physical signs gave unequivocal evidence of the reaccumulation of fluid. Mr. Hillman was again requested to puncture the chest at the same spot, and subsequently to make a second opening and insert a "drainage tube." This was accordingly done; four pints of pus were evacuated from the first opening, a long iron-eyed probe was then introduced, and passed downwards and backwards until its point could be felt in the eleventh intercostal space, about four inches from the spine. This was now cut down upon, and by its means a "drainage tube" was brought through the two openings, and tied together in the way described in Dr. Goodfellow's paper.

The relief was found the next day to be very great. The pulse had fallen from 150 to 120; the right side of the abdomen had lost its fulness, and the heart's apex could now be felt beating in the fifth intercostal

space, only half an inch to the left of the nipple; a large quantity of pus had drained away during the night. From this time the patient's recovery was uninterrupted; he had good nights, took his food well, and his countenance soon lost all distress; during the first three weeks after the insertion of the tube the discharge of pus was copious. At the end of this period the physical condition of the chest was as follows: There was a notable diminution in the size of the right side; it was generally resonant on percussion, and there was the same metallic ring with breathing, voice, and cough; there were, however, some irregular moist sounds, audible immediately below the clavicle. The respirations had now sunk to 32. He continued gradually to improve during the month of December, the side discharging freely during the time. He took quinine and nitro-muriatic acid, with a liberal allowance of meat, beer, and wine. His pulse fell to 104 when he was in the lying posture; it was 120 when he sat up; the respirations remained at 32. In the beginning of January the chest was carefully measured, and the right side was found to have notably shrunk. It was now (two inches above the nipple) one inch and three-fifths less than the corresponding side; whilst, two inches below the nipple, it was one inch smaller. There was no change in the other physical signs; there was the same resonance, the same metallic sounds. In this way he went on during the months of January, February, and March, the side discharging moderately, and his general health day by day improving. He took cod-liver oil, but did not gain more than a few ounces in weight.

In the second week of April the physical signs were again noted. The right clavicle, the spine of the scapula, and the nipple, were half-an-inch higher than those of the opposite side. The side itself immediately below the nipple was one inch and a quarter less than the left. There was marked flattening under the right clavicle, in which region, as low as the nipple, there was moderate resonance with feeble vesicular breathing. Here, however, the old metallic ring was still audible. The heart's apex was beating in its proper place. There was also flattening of the posterior and lateral regions, with comparative immobility of the ribs. In these situations there was obscure resonance as low as the seventh rib, where hepatic dulness commenced; but there was no breathing audible, only the metallic sounds, although these, indeed, were less ringing. On the left side, the breathing was loud and clear.

As it was important for the patient to have advantage of change of air, an admission was procured for him into the Hastings Infirmary. Here he remained during the months of May and June, spending the greater part of his time upon the beach, and taking no medicine. He returned, as far as aspect was concerned, in perfect health; he was ruddy, and free from all look of illness. He could walk several miles without fatigue, could run, and ascend stairs without inconvenience. His pulse was 72 when he was lying down, the respirations 28, and he had gained twelve pounds in weight. The side discharged through the openings about half an ounce of pus daily. With all this, however, there was but little change in the physical signs; indeed, with the exception of there being slightly less flattening under the clavicle, it could not be said that there was any. There certainly was no increased area of vesicular breathing, and no change in the size of the chest. Nor, indeed, had any change occurred up to the end of December, when he was last examined. His general health remained as good as on his return from the country, but the condition of the chest had not altered. The lung was evidently compressed and bound down to the upper part of the chest so firmly, that more expansion cannot be anticipated. Much,

however, has been achieved by the insertion of the tube and the prevention of all reaccumulation of pus. The liver has risen from below the level of the umbilicus, high up under the ribs; the lung has slightly expanded at its upper portion, and sufficient shrinking of the side has taken place, notably to contract the original cavity. The constitutional effects, also, of the presence of a large quantity of pus have been avoided. Directions were given to the patient to wear the tube during the winter, in the hope that a still further diminution of the secreting surface would take place, and so allow of its removal.

ART. 48.—*Statistics of Tracheotomy in Croup at the Hôpital des Enfans, at Paris, in* 1859, 1860, *and* 1861. By M. ROGER.

(*Gaz. Hébdom. de Méd. et Chir.*, Dec. 13, 1861.)

We cull these statistics from a paper read by M. Roger, on diphtheritic paralysis and the statistics of croup, at the Parisian Hospital Medical Society, on the 27th of November, 1861.

In 1859, there were 164 operations, of which 40, or 24·39 per cent., were successful. In 1860, there were 130 operations, of which 23, or 19·23 per cent., were successful. In the first ten months of 1861, there were 82 operations, with 25 cures, or 30·48 per cent.

The mean success for the three years is 24·68 per cent.—a figure which is almost identical with that arrived at by MM. Roger and Sée, from some of their previous statistics. At the Hôpital des Enfans, therefore, a *fourth* of the patients attacked by croup are saved by (or after) tracheotomy. This proportion, however, does not include the desperate cases in which an operation is not thought to be advisable—cases which, amounting to a ninth of the whole number, augment the number of deaths, and diminish the mean chances of success to 19 or 20 per cent.

ART. 49.—*Malt as a Remedy in Bronchial Affections.* By M. FRÉMY, Phys. to the Hôpital Beaujon, Paris.

(*Gaz. Hébd. de Méd. et Chir.*, Jan. 8, 1862.)

M. Frémy has recently published, in the 'Moniteur des Sciences Médicales,' an interesting paper on the effects of malt in certain affections of the chest. Malt (*byre, maltum*) is barley which has been made to germinate by moisture and heat, and afterwards dried, in order to destroy the vitality of the seed. It is carefully hulled, pulverized, and exhibited as a powder, or in baths, &c. The powder and extract of malt were administered without any benefit, by M. Frémy, in sixty-four cases of pulmonary excavation. But these compounds, which were powerless in compound tuberculosis, were prescribed with remarkable success for bronchitis, incipient phthisis, and bronchial catarrh. For two months, M. Frémy exhibited beer and malt powder to a girl who for several years had been affected with cough, had grown much emaciated, and bore in the summit of each lung unmistakeable evidence of tubercular consolidation. Cod-liver oil and other drugs had been fruitlessly resorted to, when malt was pre-

scribed. This remedy soon effected an improvement; not only did the cough cease, but respiration became more free, the dulness on percussion lost its intensity, the vesicular murmur became even and soft, appetite and strength were restored, and the condition of the patient is now in every respect satisfactory. In chronic catarrh, M. Frémy has derived much benefit from preparations of malt.

In the incipient stage of simple bronchitis, unattended with feverishness, but complicated with hoarseness of voice, malt in many instances suddenly checked the progress of the symptoms. Malt will be found especially useful at the end of those bronchial irritations which have a tendency to settle permanently on the chest, and often bring on severe dyspepsia in the aged; the extract, in such cases, promptly restores the digestive powers and cures the bronchitis. In uncomplicated dyspepsia, malt liquor is beneficial when appetite is absent, and the foul condition of the stomach has been removed. In Germany, it is a popular remedy for the anæmia of nurses. Malt-powder owes its tonic virtue to the *diastase* into which the proteine matter of the barley is converted during germination. This element is to be found in the malt supplied by the Berlin brewers, in the proportion of one grain for every five ounces, whereas not a trace of its presence can be detected in the malt of the Paris brewers. The former also contains *lupulin*, which increases the efficacy of the *diastase*, but would vainly be sought for in the Paris malt. M. Frémy refers the rapid improvement observed in his patients to the happy association of these several principles in the preparations he has used at Hôpital Beaujon.

ART. 50.—*On Hæmoptysis.* By Dr. J. C. B. WILLIAMS.

(*Lancet*, April 19, 1851.)

"Hæmoptysis," we quote from the last Lumleian Lectures at the Royal College of Physicians of London, "may be mentioned as a condition distinct from phthisis in some cases where it occurs singly and in a marked degree, without further and ultimate development of the final stages of that disease. Unquestionably, in ninety-nine out of every hundred cases, the cause of hæmoptysis is to be found in tubercular disease of the lungs. I speak here of cases where the hæmorrhage is to the extent of one drachm and upwards. There is an exception, indeed, to be made for pulmonary apoplexy, where a good deal of bleeding may also occur. But, even in these cases, the amount of blood expelled is usually much smaller than in the tubercular hæmoptysis. This is not difficult to understand. The deposited tubercles give rise to congestion of the lung and the presence of a larger quantity of blood. They also affect the vessel itself, rendering its wall brittle, so that it is more easily ruptured, and, when ruptured, gives issue to a larger quantity of blood. The worst cases of hæmoptysis—the cases in which the most alarming quantities of blood are poured out, are those in which the disease is situated near the root of the lung. Where the dulness is found to reside in the interscapular space, the hæmorrhage is likely to be both more frequent and more

considerable. In fact, this corresponds in position with the largest blood-vessels. Hæmoptysis often occurs most severely in the early stages of phthisis; it is then that the blood-vessels of the pulmonic system contain a greater volume of blood than at the later stages of emaciation and debility, and the vessels are more likely to bleed, and the bleeding to yield a more profuse flow.

"The influence of styptics avails to staunch the blood, and should be means calculated to moderate the circulation. After much observation, I favour the employment of the simple and known styptics, frequently exhibited, in large doses. I think well especially of the use of gallic acid in full doses. I know there is a doubt in the minds of some as to the efficacy of gallic acid as a styptic; but I must say that I have none. I give it in doses of ten grains, and its efficacy is increased by combining it with a derivative. I combine it frequently with cream of tartar, which my namesake, Dr. Robert Williams, has shown to be itself possessed of hæmostatic properties. Sometimes it is useful to combine it with opium or digitalis. If there be much excitement, then a useful adjuvant is found in tartarized antimony. Gallic acid failing, I believe that great service may be derived from the use of the acetate of lead, but not in small doses. I never trust to less than three grains to a dose each hour or half hour, with a little laudanum and acetic acid. There is no harm or risk of lead-poisoning if once a day the alimentary canal be swept clear with the sulphate of magnesia. This prevents the colic. In this way the styptic effect of lead is produced better than by administering the smaller doses, and at the same time any ill effects may be thus prevented. If called to a case of hæmoptysis, I would not put ice on the chest. I am obliged to speak thus curtly, because our time presses. No doubt, placing ice on the chest will control the bleeding, but it does this at a great cost. It substitutes for the hæmorrhagic condition a worse evil. The violence of the reaction which follows is very injurious. Some of the worst cases of galloping consumption—that is, of phthisis accompanied with rapid inflammatory change—which I have ever seen, have been cases in which the most rapid symptoms of destruction have followed the arrest of hæmorrhage by the local application of ice to the chest.

"In my practice, during the seven years from which I am drawing these cases, occur notes of only three of fatal hæmorrhage from the lungs. It does not follow absolutely that none other occurred amongst my patients; but these are all recorded; and as it is with failures, so with successes, the same general degree of care and accuracy was applied, and they may be accepted as susceptible of fair comparison. One instance of fatal hæmoptysis is that of a young man whom I saw early in 1853, with Mr. Jones, of the Strand. There was limited disease of the apex of the left lung. Excavation and hæmoptysis were the consequences. But with styptics and cod-liver oil he got over the loss of blood, and improved considerably in general condition. Some months after, he was feeling well, but there was still consolidation at the apex, and signs of a cavity in the left lung. In September, 1854, he was going on well; but he had grown too bold. He went shooting down in Norfolk, and taking strong exercise. He

had an attack of hæmorrhage to the extent of a pint of blood; this was once or twice repeated, and he died. There were found a few tubercles at the apex of the left lung, and a cavity of the size of a walnut, pretty well lined, the lining being deficient at one point only where the blood had been poured out. This was a case of limited disease, and its history is instructive, as indicating the fatal degree of hæmorrhage which may occur in such a condition, and the necessity for proper caution. Had the patient been less venturesome, and more restricted in his movements and pleasures, he might have escaped perhaps that fatal issue, or at least averted the immediate occurrence.

"The second case of fatal hæmoptysis is that of a lad, aged fifteen years, who in April, 1849, was attacked with pneumonia, which left a residual deposit in the lungs, which subsequently became the seat of tubercle. He improved under treatment for some time, and in October, 1850, was much stronger and in better general health than he had been. In the spring of 1851, he went riding and shooting, and was suddenly attacked with fatal hæmoptysis. Here the disease was more extensive.

"The third case was that of a nobleman, whom I saw several times in town, in 1855. There were unmistakeable signs of disease of the lung. He had brought up blood several times; but he by no means could be brought to think himself so little equal to exertion as he really was. He attended quarter sessions and so forth; he was attacked with bleeding, and brought up pints of blood during some days. He died, and the lung was found extensively disorganized with abscess.

"I have in this period notes of thirteen cases of hæmoptysis, which have been under observation from seven to fourteen years, and the patients remaining well and active.

"One case is that of a gentleman whom I saw in May, 1850. He was the subject of hæmoptysis, which had existed in a slight degree at intervals during eight years. On this occasion he had lost a pint of blood. He had been treated before I saw him with Ruspini's styptic—starvation. He took gallic acid and tannic acid—he rather thought that the latter had the better effect—and subsequently cod-liver oil. He continued to take cod-liver oil for a long time. Till March, 1858, he remained in excellent health. In that year he had another attack of hæmorrhage. After that he had none other. There are still signs of consolidation near the root of his left lung; but there is nothing in his appearance to leave a doubt but that, as he has lived twelve years, so may he live thirty or forty years longer without suffering a renewal of the attack.

"Again, a clergyman consulted me in August, 1850, who had a cough of nineteen months' standing. There were no signs of excavation; but he lost a pint and a half of blood, and suffered occasional attacks of hæmoptysis for a year afterwards. But the disease did not go further—did not go on till the ulterior stages of change. He took styptics, oil, and tonics; and when I last saw him, in 1861, he was in a tolerable state of health, and bids fair to continue so. I cannot run through the other cases; but my notes show of pure hæmoptysis thirteen successes, and six minor successes."

ART. 51.—*A Statistical Inquiry into the Prevalence of numerous Conditions affecting the Constitution, in* 1000 *phthisical persons when in health.* By Dr. EDWARD SMITH, Assistant-Physician to the Hospital for Consumption, &c., at Brompton.

(*Proceed. of Royal Med. and Chir. Society*, March 25, 1862.)

The 1000 persons comprehended in this inquiry were out-patients at the Hospital for Consumption, at Brompton, 600 being males, and 400 females. The scheme of inquiry proposed to each patient consisted of 138 queries, and the following is a summary of the facts obtained:—

The average age of the patients was 28·8 years. 30 per cent. had been born in London, 36 per cent. had lived chiefly in London, and 53 per cent. had lived in London during the preceding three years. 8·8 per cent. could not read nor write, and only 14·3 per cent. had been insufficiently nourished. 1. *Parental conditions.*—54 per cent. had lost the father; 46 per cent. the mother; and 28 per cent. had lost both parents. In 25 per cent. only were both parents living. The average age of the parents at death was 5·08 years, with an increased duration of 4·7 years on the part of the fathers. The most frequent age at death was 35 to 55 years; whilst only 11 per cent. died under the age of 35, and some lived upwards of 95 years. 18 per cent. had experienced feeble health before the birth of the patient, and 34 per cent. throughout life. In 22·7 per cent. one or both parents had led unsteady lives. 21·1 per cent. of the parents had died of consumption; whilst in 2·8 per cent. the grandparents, 23·3 per cent. the brothers or sisters, and 9·1 per cent. the uncles or aunts, had died of the same disease. They had suffered from rheumatism in 22 per cent., from asthma in 9·4 per cent., from liver disease and gout in 9 and 7·2 per cent., and from fevers, ague, insanity, and diabetes, in 4 and 5 per cent. Presumed scrofulous affections were extremely rare. In only six cases was there consanguinity of the parents. The age of the parents at the birth of the patient was in half of the cases from 25 years to 35 years; and in only 2 per cent. was it less than 20 years. The number of the children was very large, viz., an average of 7·5 to a family, and in some families there were 23 children. The patient was the first child in 20 per cent., and the first, second, or third child in half of all the cases. 40 per cent. of the parents' children had died. 2. *Personal conditions.*—In only 23 per cent. were the patients under 20, and a few were 60 years of age. 24 per cent. had been feeble at birth, whilst 22 per cent. had suffered from feeble general health, and 17 per cent. from generally defective appetite. In 12·6 per cent. the lungs had been always delicate; 2·5 per cent. had been dry nursed; 25·4 per cent. had perspired with unusual freedom; 25 per cent. had never worn flannel next the skin; and 55 per cent. had suffered from coldness of the extremities. 72·5 per cent. had an excitable temperament; 62·1 per cent. had medium brown, or light-coloured hair; 74 per cent. had grey or blue eyes; 60 per cent. had florid complexions; and 46·7 per cent. had a fleshy habit. 16, 65·4, 60, and 41 per cent.

had not had measles, scarlet fever, smallpox, and whooping-cough in their order; and the frequency of any long-continued ill-effects from these diseases was insignificant. 12·8 per cent. had suffered from enlarged glands, and 4·5 per cent. from long-continued affections of the eyes; but otherwise the evidences of scrofulous disease scarcely existed. 16·7 per cent. had suffered from inflammation of the lungs, and 14·8 per cent. from rheumatism; whilst typhus fever and frequent diarrhœa had occurred in 8 per cent., ague in 5·6 per cent., and liver disease in 4·3 per cent. of the cases. The menstrual epoch was at the age of 14 and 15 in 36·4 per cent, and in 11 per cent. only was it before the age of 13; 40 per cent. had complained of general irregularity, and in 29 per cent. the quantity was insufficient. Leucorrhœa was considerable in 42·2 per cent. 43·5 per cent. were married; and of these 13 per cent. were childless at the period of inquiry. Their average age at the birth of their first child was from 20 to 25 years, and in only 9 per cent. were they under 20 years. The number of children per family was 1 and 2 in 44 per cent., and 1, 2, and 3, in 55 per cent. (the patients' average age was 28·8 years). 38 per cent. of the children had died, and in 43 per cent. the general state of the health of the children was bad. Abortions had occurred in 46·2 per cent. of the child-bearing married women, and some had suffered eight abortions. 11·6 per cent. of the males had committed sexual abuse; 18·2 per cent. had been addicted to masturbation, and 22 per cent. had suffered from involuntary emissions. 16 per cent. had syphilis, and 38·5 per cent. gonorrhœa; one on several occasions. 29·6 per cent. had led a bad life at some period, 24·5 per cent. had drunk to excess, and 48 per cent. had smoked tobacco; 19·3 per cent of both sexes had submitted to late hours, and 22·2 per cent. had suffered much anxiety. In 70 per cent. there was some complaint as to the injurious influence of their occupations, and of those causes, exposure, long hours, close and hot rooms, bending postures, and dust or fumes, were complained of in 32·1, 28·6, 24·4, 20, and 15·8 per cent. in their order. 9 per cent. had taken mercury largely, and 54·4 per cent. had been bled at the arm from 1 to 12 times. The author then considers some of the most important truths which the inquiry had evoked, and particularly the questions connected with hereditary transmission; the especial liability of the female sex to many of the conditions pointed out, and the state of the system; the diseases and the effects of the immoralities of life upon the patients. With regard to the greater liability of females over males, it was shown, in reference to parents, that more mothers than fathers who had children early, had feeble general health, and had died early. More female than male patients had mothers who died early; had most relatives who had died of phthisis; had parents with one child only; had experienced feeble health and defective appetite throughout life; had had delicacy of the lungs; had married when very young; had feeble children; had lost most children; had suffered from anxiety; had had measles, scarlet fever, and whooping-cough; had not worn flannel next the skin; had a very defective education; were of susceptible temperament; had brown eyes, florid complexion, and fleshy habit, and had suffered from coldness of the extremities.

Art. 52.—*On the results of treatment in Phthisis.* By Dr. C. J. B. Williams.

(*Lancet*, April 19, 1862.)

Speaking of the results of his own experience in the treatment of phthisical cases during the last seven years, Dr. Williams says (we still quote from the Lumleian Lectures at the Royal College of Physicians of London):

"Now, as to the summary of my experience, during these seven years of practice, of the result of treatment of phthisical cases. I have notes of 7000 cases of phthisis, and I find the average duration of life under the disease has been four years; they have terminated in the immense majority of cases in death. The experience of Louis and Laennec gave an average duration of two years. So that, by the introduction of cod-liver oil and other agencies, we have lengthened the period, and doubled its duration. What further? This is only a minor success—a prolongation of life. I have notes of patients who, having presented the most unequivocal signs of phthisis, have lived afterwards from two to eighteen years in comparatively good health, but it were hard to say whether they were perfectly cured. Phthisis is a constitutional disease, and it is hard to change the constitutional character. I have notes in this period of only twenty-four cases to which the word "cured" could be applied. They have gone on from two to eighteen years in fair health, and filling their places as useful members of society. Of partial cure, cases in which the duration of life has been prolonged beyond the average of four years to a longer period, I have thirty-one cases of prolongation from six to thirty-one years. They have passed these years in a considerable degree of comfort, and with the ability of fulfilling their social duties, and partaking in rational pleasures. These persons are now living; their life has been rendered useful and comfortable, and they may yet live for many years. I have another set of cases in which, although death has followed in almost if not quite all of them, life was prolonged to a considerable extent. There are twenty cases in which it was extended from six up to sixteen years. These three classes make up in all seventy-five cases. These are all the successes of which I can boast. Perhaps, if my records had been more completely accurate, I could have added some additional names to the list; but, on the other hand, it might have been necessary to register also some failures which have now escaped enumeration."

Art. 53.—*On the Average Duration of Cases of Phthisis.* By Dr. Hill, Physician to the Eastern Dispensary, Bath.

(*Med.-Chir. Rev.*, Oct. 1861, and Jan. 1862.)

In an elaborate paper, in which he analyses 220 cases of pulmonary consumption occurring at the Brompton Hospital, and to which we have had to refer previously, Dr. Hill says:

"In a practical point of view, the most important thing for the medical attendant to be well acquainted with, is the probability of present improvement in any individual case at any time that it may present itself to his notice, to assist him in which, amongst other things, the chief elements for consideration may be enumerated as the question of emaciation, whether the patient have been losing or gaining weight recently, whether night-sweats are present or absent, and the condition of the pulse. How far the latter may be considered as a guide will be seen by the following statement: of 108 patients (male and female) in whom the pulse was above 100 at the time they came under observation, only 32·4 per cent. improved during the time they were under treatment; and of ninety-six in whom the pulse was at or below 100 per minute, 63·6 per cent. improved. Profuse nocturnal diaphoresis will usually be found in concurrence with rapidity of pulse, and indicates in the same manner in a general way advance of the pulmonary affection. Sixteen such cases, in which the diaphoresis continued unchecked in spite of treatment, got rapidly worse or died within a comparatively short period, whilst in nearly every case of cessation of the night-sweats a corresponding improvement in other respects took place.

"The advance or arrest of emaciation may, as a rule, be looked upon as a very good indication of the condition of the patient, a gain betokening improvement; and a loss of weight indicating in almost every case advance of pulmonary disease. The emaciation so constantly attendant upon tubercular disease of the lungs is probably due to two circumstances—1st, defective nutrition; on account of the accompanying vitiated state of the digestive organs, and the retention of fat by the liver, evidenced by that fatty condition of the organ so frequently found in connexion with pulmonary phthisis, which is the result of resorption and retention of fat, and not of a fatty degeneration in its ordinary sense; and, 2ndly, the decreased pulmonary surface available for the aëration of the blood: for if in the healthy body a certain amount of lung-tissue is provided, through which the blood circulates in a given time, in order to maintain the due interchange of elements necessary to the waste and repair of a certain weight of organized tissues, we may fairly conclude that a decrease in the weight of the body is necessarily attendant upon a decrease in the amount of permeable pulmonary tissue. To show how important and useful a criterion we have in the observation of the emaciation or otherwise of the patient, I may mention that of forty-six patients who experienced a loss in weight of from two pounds and upwards, only five showed any symptoms of improvement generally, all the rest having become worse, in most instances with a degree of rapidity commensurate with the loss of weight; whereas, in sixty-three patients who gained weight to any marked amount, there were decided symptoms of general improvement in all, with more or less disappearance of physical signs in thirty-eight. In the other twenty-five the physical signs advanced, notwithstanding improvement in general health—that is, passed from the first to the second stage, or from the second to the third stage—which circumstance leads me again to notice the error of considering these conditions of lung as stages of the

disease; for if a patient has sufficient strength of constitution to sustain the demand during the process of excavation, he is oftentimes, after the formation of a cavity, placed in a condition not only of greater ease and freedom from cough, but also much more favorable to the prolongation of life.

"The occurrence of hæmoptysis is also said to be a symptom of chronicity, and such would appear to be the case from the fact, that of forty male and female patients in whom it took place, in some even to a considerable extent, an average duration of 2·6 years is yielded; whilst of an equal number who never had hæmoptysis, an average of only 1·8 was the result. These statements may, however, be interpreted inversely, that those in whom the disease has continued longest are in the same proportion more likely to have had an attack of hæmoptysis at some period or other, though I think that in most of the hæmoptysis cases this symptom usually shows itself at an early stage of the disease, and therefore the idea of attendant chronicity may be lawfully used to allay the excitement and terror of those who are the subjects of these hæmorrhagic attacks.

"In females we have an additional element in the catamenial functions, which we can call to our aid in forming an opinion as to the probable issue of a case, and its importance in prognosis will be seen by the accompanying groups of cases. Of nine patients in whom the disease had existed for a period of twelve months or more, and in whom the menstrual functions continued in a normal state, only two got worse whilst under treatment, an average of only about 22· per cent. Of twenty-five patients in whom there had been evidence of pulmonary affection for half a year and onwards, with absence of the catamenial discharge for at least three or four months, twenty lost ground with more or less rapidity, an average of 80· per cent.; and the most unfavorable cases, or those least amenable to treatment, will be found amongst those in whom the catamenia disappears nearly at the same time, or very shortly after, the pulmonary affection is manifested. Its reappearance in any case will, I believe, be always found coincident with some general re-establishment of health; for though its absence must not be considered incompatible with improvement, recovery under these circumstances very seldom occurs in any marked degree.

"From these facts, then, we may conclude that for any individual case free from the more dangerous complications, the average duration of two and a half years may be expected; and this period will be more or less prolonged, and a degree of present improvement may be anticipated, according as the case in question presents those symptoms which are indicated above as warranting a favorable prognosis."

ART. 54.—*On Pneumothorax as a complication of Pulmonary Consumption.* By Dr. WILLIAM R. HILL, Physician to the Eastern Dispensary, Bath.

(*Med.-Chir. Review*, Oct., 1861, and Jan., 1862.)

Dr. Hill finds six cases of pneumothorax in 220 cases of pulmonary consumption, occurring at the Brompton Hospital. He thinks, however, that this percentage of 2·72 ought to be computed at a rather higher figure, as allowance must be made for the majority of the 220 having been under notice only a limited time.

"The symptoms leading to suspicion of its occurrence were in all the cases pretty characteristic, and may be enumerated as sudden and sharp pain tolerably localized in some part of the thorax, generally after violent coughing, attended by a marked increase of dyspnœa, quickened pulse, an anxious expression of countenance, and some degree of feverishness.

"These general or rational symptoms are in the majority of instances accompanied by tolerably characteristic physical signs, consisting of a tympanitic or drum-like percussion, with often marked fulness of the intercostal spaces, and absence, sometimes complete, of the auscultatory sounds, whether natural or morbid, over a more or less extended surface. Additional evidence may also be obtained by the occurrence of metallic tinkling, or by an amphoric character being imparted to vocal resonance or to distant respiratory sounds.

"Easy as the diagnosis of pneumothorax is in a typical case, there are difficulties sometimes presented to the statement of a decided opinion—as, for instance, when, by reason of neighbouring pleuritic adhesions, the cavity in the pleura containing air is very circumscribed; and, on the other hand, a large pulmonary vomica will often yield tympanitic percussion and amphoric phenomena, compelling the physician to form his opinion according to general symptoms.

"As to its cause there can be but one opinion, that it is produced by the rupture of a vomica in consequence of some sudden strain or jerk, causing the distending and confined air to seek a ready exit through its thinned walls there unsupported by pleuritic adhesions, the abundance and firm nature of the latter in pulmonary phthisis being the great safeguard against its more frequent occurrence.

"Of the six patients, four died; one on the third day, one on the eleventh, and two about two months after the attack; one left the hospital about two months after his attack, with very small prospect of a prolonged survival; whilst the sixth recovered not only from the immediate danger of the pneumothorax, but left the hospital after six weeks, considerably improved in general health.

"In all there had been physical evidence of pulmonary tubercular softening, and in four, cavities were known to exist before pneumothorax occurred. The pneumothorax was on the left side in five of the cases, and on the right in the remaining one, with one exception corresponding with the side on which there was evidence of the greatest amount of disease. As to *sex*, four were males and two were females.

"In three of the four fatal cases the diagnosis was confirmed by autopsy, and the fourth lived two months after the occurrence of the attack, and left the hospital three days before death, so that no examination was obtained. The case that made such a good recovery is sufficiently interesting to warrant a more particular notice, showing, as it does, the complete recovery from an accident of an usually fatal nature to phthisical subjects. The patient was a female, aged twenty-six, admitted with all the general symptoms of consumption; cough, night-sweats, loss of weight and strength. Pulse 130. Respirations, 28 per minute, with the physical signs of softening at the left apex, the right lung being healthy. Six weeks after admission she complained of pain under the left scapula, which was not relieved by a blister; and on examination, the percussion was found to be quite tympanitic over the left chest anteriorly, the respiratory sounds were distant, and distinct metallic tinkling was heard under the left clavicle. The pulse was 140 per minute. She gradually recovered from this condition, the tympanitic and amphoric phenomena disappearing in the course of six weeks, whilst faint respiration was heard all over the left chest, without any crepitation in any part. During the latter half of this period she gained six pounds in weight, and finally left the hospital, declaring she felt quite well. There remained an occasional slight hacking cough without expectoration; no dyspnœa, even when ascending stairs, and the pulse was reduced to 108, the respirations being 20 per minute.

"The most appropriate treatment in cases of pneumothorax seems to consist in a local application of warm cataplasms and sinapisms, with opiate draughts, combined with small doses of antimony, if much fever exists. Puncture of the chest will in some cases afford great temporary relief by permitting the escape of the air contained in the pleura, thus diminishing the dyspnœa so much that a patient will sometimes beg for its repetition. It can only, however, be regarded as a palliative measure."

ART. 55.—*On the Use of Chlorate of Potass in Consumption and Scrofula.* By Dr. ALEXANDER HARKIN, of Belfast.

(*Dublin Quarterly Journal of Med. Science*, Nov., 1861.)

"For a period of nearly eighteen months," says Dr. Harkin, "I have been prescribing this remedy for every variety of scrofulous disease, and for consumption in its various stages; and although, for a disease of such protracted character as consumption, the period of observation is too limited to allow of complete or extensive statistical results, yet I consider that I am justified in stating that, with this simple remedy, in conjunction with the ordinary hygienic, dietetic, and moral means, a specific will be found for consumption in its first and second stages; and that, for the last, it will be found most potent in controlling the hectic symptoms and the colliquative diarrhœa, without increasing the perspirations, as in the administration of ordinary astringent remedies. When we have only tubercular deposition or softening to deal with, this remedy has a most powerful effect,

when combined with judicious counter-irritation; but I do not mean to pretend that, by any species of medicamentation, we could, in every instance, restore a patient with large cavities in the lung, with general tubercular infiltration, ulcerated trachea, and perhaps perforations of the pleura, any more than I would propose a universal remedy for the suppurative hepatization stage of pneumonia. It is needless to argue, that if the disease be removed in the first or second stage, we need not fear the last; and as these stages usually extend over a lengthened period, and are those in which medical men are usually first consulted, the terrors and suffering of the last stage need not so much appal us.

"The curative effects of chlorate of potass in scrofula are perfectly marvellous; for it appears to exercise double influence when aided by the assistance of lungs comparatively or wholly sound; fifteen or twenty days generally suffice to heal the most extensive ulcerations of the cervical and submaxillary lymphatic glands; strumous ophthalmia yields immediately to its internal use; and glandular enlargements and indurations of a scrofulous character in any part of the body appear to subside with wonderful rapidity. As to its mode of administration, I have generally given it internally in doses of from five to twenty grains, dissolved in pure water, four times daily; hot water takes up readily a scruple to the ounce without after-deposition, and this proportion is perhaps sufficient for any purpose, and as much as ordinary stomachs will tolerate. I have also used it as match-paper, burning it in the bed-room before the patient retires to rest; an ointment prepared by triturating two drachms of the powdered salt with an ounce of lard is also very serviceable in the removal of tumours, or for inunction over enlarged joints. On the occasion of first administering it internally, in the case of consumption afterwards to be detailed, I was very watchful lest it might produce bronchial irritation, or intercurrent pneumonia; I have never found any bad effects of that kind follow its use; and further than suspending it during the existence of hemoptysis, I have learned to give it without fear in every stage of the disease."

Dr. Harkin relates three cases in illustration.

ART. 56.—*On the Form of the Ends of the Fingers as a Sign of Phthisis.* By M. RIGAUD.

(*Gaz. Hébd. de Méd. et Chir.*, April 11, 1862.)

In a statistical note, based upon 179 cases of death from phthisis, and read at the Parisian Medical Society, M. Rigaud finds that no great importance can be ascribed to a sign of phthisis to which considerable value is generally attached, namely, clubbed fingers. He finds, indeed, that this sign was absent in 135 out of the 179 cases, and that it was present in very many cases in which there was no trace whatever of phthisis or of a phthisical disposition, particularly in persons whose occupation involved such use of the fingers as is required in polishers, burnishers, persons using the sewing machine, pianists, &c.

Art. 57.—*On Consumption in Australia.* By Dr. Reeves.

(*The Medical Record of Australia*, Dec. 1861, and Jan. 24, 1862.)

In the papers before us, Dr. Reeves traces with great care the causes, symptoms, duration, complications, and terminations of consumption in Victoria. The number of cases commented upon is upwards of 200: the conclusion arrived at is, that consumption of a particular kind, or consumption arising not so much from hereditary predisposition, as from inattention to proper clothing, dry residences, and temperance, is much more common in Australia than it is generally believed to be in this country. The deaths in Melbourne and the suburbs, for twelve months, from 1st January, 1860, to 31st December, 1860, were 310 from consumption alone, out of 4264 from all causes; and the deaths from laryngitis, bronchitis, pleuritis, and inflammation of the lungs, 419.

Of 189 cases admitted into the Melbourne Hospital, in 1850, fourteen were suffering from diseases of the lungs; of 222 admitted in 1851, ten; of 547 in 1852, twenty-one; of 1423 in 1853, ninety-one; of 1460 in 1854, 137; of 1449 in 1855, 195; and of 1550 in 1856, 134. The number of patients admitted, suffering from diseases of the lungs, has gradually increased. In the last six months of 1859, 114 entered; and in the month of July, 1860, thirty-five; the number admitted in the corresponding month of 1859 being twenty-three.

"Great as is the mortality, and large as is the number of admissions into the hospital, the climate, under certain circumstances, is highly favorable for those suffering from diseases of the lungs. For instance, if the disease is chronic, and the patients suffer but little in the summer months, it will be found beneficial. It does not matter in consumption whether one lung is extensively diseased, or whether the upper third of both, for I have seen cases arrive here with large cavities in one lung, or with cavity in the apex of one lung, and induration in the upper third of the other, and yet do well; but in none of the cases was there extreme emaciation or debility. I think I am justified in saying, from having carefully studied the disease in England and here, that persons with large cavities, which would be certain to cause a fatal termination there, would have here, with great care and attention, a great chance of recovery, or of living for a number of years. In England, patients with cavity die from the profuse secretion from its walls; but here, unless the walls of the cavity are breaking up, or inflammation of the trachea or bronchial tubes exists, there is but very little expectoration of purulent matter, the quantity seldom exceeding one, two, three, and four teaspoonfuls in the course of the twenty-four hours.

"The habit which some members of the profession have got into, of sending out patients here, suffering from consumptive symptoms, to get their livings as domestic servants or labourers, cannot be too strongly censured. The great, and often sudden variations in temperature—the intensely hot sun, followed by very cold nights, renders the climate exceedingly trying to those possessing the strongest con-

stitutions; and, therefore, those who come here with a predisposition to consumption, soon fall victims to the disease. Again, patients are often sent here without any reference to the best period of the year for their making the voyage without being exposed to severe weather on the English coast, or during the latter part of the voyage. The best season for consumptive patients to leave England, is from the latter half of September to the first half of October, as they are then nearly certain of favorable weather throughout the voyage, and they arrive here in the hot months.

"The mortality from consumption among domestics and labourers, *i. e.*, persons employed in out-of-door occupations, is, with the exception of sailors, much greater than among those who are employed in occupations which do not require much exposure to the weather. Thus—

"Of forty-two cases admitted, from 1850 to 1856, in which the patients were female domestics, or employed in domestic occupations, twenty-seven were noted as having died in the institution; and of sixty-seven, from 1857 to 1861, thirty-four.

"Of 108 cases, in which the patients were labourers, or employed in out-of-door occupations, admitted from 1850 to 1856, sixty-seven died; and of 107 admitted from 1857 to 1860, forty-six.

"Of twenty-seven sailors, admitted from 1850 to 1856, death ensued in eighteen; but of thirty admitted from 1857 to 1860, eleven.

"Of sixty-four males following in-door occupations, as cooks, shoemakers, tailors, shopkeepers, &c., admitted from 1850 to 1856, death ensued in twenty-seven; and in twenty-four out of forty-three, admitted from 1857 to 1860.

"Of thirteen professional men and women admitted, death ensued in seven of the number.

"From this table it will be seen that, although the mortality has diminished but little among females, employed in domestic occupations, and among males employed in in-door occupations, yet it is less among labourers, and this has been particularly the case in 1859 and 1860; for, of forty-two cases admitted in the former year, only twelve died; and of twenty-seven admitted in 1860, nine. This diminution in the mortality among this class, and also among sailors, may be, I think, attributed to intemperance being less prevalent, and to their being better lodged and cared for than formerly.

"Intemperance is still much too prevalent, and there is great room for improvement in the construction and draining of the habitations of a large mass of the population.

"With reference to the habits of the patients who have come under my notice, I have found that forty-two out of 165 cases presented indications of having been addicted to drinking to a greater or less extent. In many of the cases there was, unless they had ceased to do so for some months, a marked increase in the size of the liver. The existence of this, when the patients have not had any malarious diseases, is of great value in eliciting a correct answer to the question, 'Have you drank much?'

"Exposure to cold and wet, working in or sleeping in a damp place,

are the most frequent causes of the disease; or it sets in after colonial fever, a fever excited by exposure to cold and wet, either from exposure, or on congestion of the lungs, which is very common during it. These causes have a much greater tendency to excite or predispose to it than any hereditary tendency. The last could be only traced in seventy-two out of 205 cases, while the first could be traced, as will be seen from the annexed table.

"Thus, out of 165 cases—

"In eighty-one the disease was attributed to exposure to cold and wet, or working in damp ground.

"In forty-eight, to sleeping in a damp room, hut, or tent, or in wet clothes.

"In twenty-one it followed colonial fever, either from congestion of the lungs, during it, or from exposure when convalescent from it.

"In three, after scarlet fever, from exposure.

"In twelve, after confinement or miscarriage, from getting about too soon, and exposure."

Elsewhere, speaking more particularly of the causes and characters of the consumption met with in Australia, Dr. Reeves says:

"Although consumption is both common and fatal in the colony, yet this depends to a great extent on causes which may be said to be preventable, namely, exposure to cold and wet, working or sleeping in damp clothes or places, or leaving off flannels, and not from any hereditary tendency, or the existence of any tuberculous cachexia. Out of 205 cases, in only seventy-two was there any tuberculous tendency; while in the remaining 165 cases, nothing of the kind existed.

"In England the reverse of this is observed, the existence of the tuberculous cachexia being the rule; the occurrence of the disease unconnected with it, as I shall show in a future chapter, being the exception. The occurrence of the disease here from this cause gives it an inflammatory type; a type not recognised in England by a large number of writers on the disease. The symptoms which mark its progress are peculiar, and are strictly those of inflammation. There is, first, congestion of a more or less acute character and extent; on this follows induration; but the two are often so blended together, that the existence of the latter is only evident by the increased vocal resonance, and the dulness on percussion; and this again breaks up, and cavity forms. This is the course the disease runs; but it very rarely happens that they pass markedly into each other; thus, it is not common to find congestion of one part occurring and passing into induration—the congestion ceasing; but the three stages are so blended together, and this is particularly the case when the upper lobe of either lung is affected. There is, 1st, *congestion*, characterised by fine crepitation, and the expectoration of mucus, or mucus tinged with blood, or mixed with clots of blood, with a scarcely appreciable increase in the dulness on percussion, and in the voice resonance; then the second stage, that of *induration*, sets in, characterised by the mucus becoming rusty coloured, dulness on percussion, and increased vocal resonance; the fine crepitation continues, but in this stage it becomes rather coarser, and the clear mucus, or the bloody-coloured

expectoration continues. I have never seen a case of induration in which the fine crepitation became coarse, that cavity did not form; and I have rarely seen in induration, when the crepitation disappeared, the lung break up. I have repeatedly seen congestion of one lung pass into induration, the induration breaking up in the upper lobes, but remaining either stationary or becoming gradually re-absorbed in the lower. The fine crepitation, as I have just observed, passes insensibly into coarse crepitation, or the two are mixed for a time, the latter becoming at length gurgling, and with it there are all the characters which mark the third, or breaking up stage, and the formation of cavity, namely, purulent expectoration alone, or mixed with the mucus, bloody or rust-coloured expectoration of the other stages, amphoric breathing increasing and passing into cavernous, and with these an increase in the vocal resonance, passing into tracheophony.

"These symptoms do not differ materially from those which precede the breaking up of a tubercular mass, and the formation of a cavity. In fact, when a cavity is formed in the lung, and the patient has neither had bloody nor purulent expectoration—a not uncommon occurrence here—it is often impossible to say whether it is a cavity resulting from the breaking up of tubercles, or destruction of the lung, the result of inflammation. The diagnosis between the two forms is not a matter of very great importance; both have an asthenic type, and, therefore, require to be treated with tonics rather than with depletents.

"The *tubercular* form of the disease, although rare here, is generally more obscure than the inflammatory, and the practitioner is often surprised to find that the female he has been treating for anæmia, depending on suppression of the menstrual discharge, accompanied by a very quick feeble pulse, often ranging from 115 to 130, and increasing feebleness and emaciation, has a large cavity in the lung, and this without any marked cough or expectoration; or that the male he has been treating for debility is similarly affected. It is, however, less frequently observed in males than in females.

"This form of the disease here, as in England, presents nearly the same features; but when it breaks up, it generally does so more rapidly here than there. It may be said to present two stages while under the observation of the practitioner. 1st, the stage of *induration* or *deposit*, in which the tubercles exist either diffused through the substance of the lung, or collected into masses varying in size from a marble to an orange; and 2ndly, the stage of *softening* or *breaking up*, in which the tubercle becomes converted into a cyst, filled with purulent matter, or with the debris of tubercles, and which may either remain embedded in the lung, and be converted into fatty matter or calcareous matter, or be discharged into a bronchial tube; or the tuberculous mass may soften where it is in contact with a bronchial tube, and form a communication with it. In both cases the result is the same, with this exception, that the cavity is formed at once in the former, often at the expense of the patient's life, from causing death by suffocation, from the escape of a large quantity of pus into the air tubes; while in the latter more slowly."

ART. 58.—*Case of Arsenic Smoking in Asthma, with beneficial results.* By Dr. FREDERICK G. JULIUS.

(*Lancet*, Aug. 10, 1861.)

CASE.—"A French lady has been subject to spasmodic asthma for twenty-five years, during twenty-one of which she has been frequently bled, had issues and setons, smoked belladonna leaves and stramonium, taken every species and form of medicine, changed her residence to various places in Europe, and all without the slightest benefit.

"Four years ago, when at Marseilles, Dr. Cauvin read an account to her of the benefit derived by asthmatics in China from smoking arsenic. Her sufferings were so great that, although Dr. Cauvin fully pointed out to her the risk and danger she incurred, she insisted upon trying it.

"She commenced by smoking a quarter of a grain of arsenic three or four times daily in a cigarette, and this she continued to do for about fourteen days, with the greatest benefit to her breathing and general health. She has subsequently much increased the dose, and when she feels an attack of asthma coming on, she does not weigh the arsenic, but takes up what she considers a sufficient dose with a small paper-knife. I asked her to-day to give me in a piece of paper the dose she intended smoking, which she did, and on weighing it carefully I found it a little over three grains. I analysed it, and found it to be pure arsenious acid. I must also mention the important fact that she does not inhale the fumes and blow them out again, as in ordinary smoking, but when her mouth is full she swallows the smoke.

"The only ill effects she has ever experienced is swelling of the eyelids, and when she first commenced, slight pricking pains in the stomach, but never to any troublesome extent. She considers herself cured. From being in a state of constant breathlessness and suffering, unable to lie down or make the slightest exertion, she is now able to go about like other persons, and is rarely threatened with an attack oftener than once in three or four months, and that is at once checked by smoking arsenic, with a very small quantity of belladonna or stramonium in the dose I have mentioned. She now uses, instead of a cigarette, a small red pipe about five inches long.

"She tells me that Dr. Cauvin has used arsenic in the same way in many cases of confirmed consumption, and has rarely failed in giving great relief, and retarding the disease."

ART. 59.—*On Generalized Emphysema.* By M. ROGER, Physician to the Hôpital des Enfans Malades, Paris.

(*Lancet*, March 22, 1862.)

M. Roger has recently read a paper on this subject before the Parisian Academy of Medicine, in which he remarks that, during the progress of acute pulmonary affections, the physician occasionally witnessed, after an unusually severe fit of coughing, the formation of a soft crepitating swelling on either side of the neck; that this swelling gradually extended under the skin, and eventually became general. "In such cases," says the author, "and they are very rare, for I have

only been able to collect nineteen (nine observed by M. Blache and myself, and ten gathered from various authors)—the emphysema has a triple seat: first in the lung, whence it arises; then in the mediastinum, which it traverses; and lastly in the sub-cutaneous cellular tissue, in which it finally spreads. This pathological condition is more frequently met with during the first four years of childhood than at any other period of life, and in nearly one half of the cases reported occurred in connexion with whooping-cough. This kind of emphysema is not to be confounded with that occurring from the decomposition of tissues, as in certain gangrenous maladies; for here the air comes from the lung: it is, however, an equally fatal symptom, for, out of the nineteen cases, fifteen died. In the four cases which recovered, the absorption of the air diffused through the subcutaneous cellular tissue occupied periods varying from nine to twenty-one days." With regard to treatment, M. Roger recommends digitalis in full doses, opium given as in perforation of the bowel, and numerous punctures with a very fine trocar.

Art. 60.—*On Ægophony.* By M. Landouzy.

(*Archiv. Gén. de Méd.*, Jan., 1862; and *Jour. of Pract. Med. and Surg.* (*Med. Cir.*), Feb. 19, 1862.)

With the exception of Skoda, all pathologists consider the peculiar tremor of the voice which has received the name of ægophony, as characteristic of pleuritic effusion. The amphoric voice-sound is another analogous symptom, on which MM. Barthez, Béhier, and Landouzy lay much stress; the last-named author conceives that the amphoric resonance of the voice is almost as frequently met with in old as in recent effusions, and gives rise to numerous errors, when it is assumed to be a sign of an abundant collection of liquid in the pleura, as not a single drop may be present, or when it is considered as indicating extensive excavations, and yet, in fact, no tubercular matter exists. But whereas, MM. Barthez and Béhier both ascribe the amphoric sound to the presence of a liquid, and whereas, one of these gentlemen designates it by the name of *bruit hydrique*; M. Landouzy contends that this quality of the souffle, and of the voice, is not caused by the fluid, but by the changes its presence induces in the condition of the lung, and he more than once has exhibited in his wards, instances of most distinct amphoric, tubular, or ægophonic sounds, which persisted, and acquired increased force, after the complete evacuation of the effusion.

M. Landouzy has recently repeated this experiment for ægophony, and has published in the *Archives de Médicine*, a case in which, after the entire removal of the liquid by thoracentesis, the souffle and ægophony persisted, and were even more distinctly audible than before the operation, and became perceptible in regions in which they did not previously exist. This, it is true, is not always the case. In another patient, M. Landouzy found the physical signs such as they are usually described—*i. e.*, he observed a marked decrease of the amphoric breathing, and of ægophony, in proportion as the fluid

escaped. These apparently contradictory remarks imply, in M. Landouzy's opinion, that the pleuritic effusion is but the indirect cause of the changes in the voice and in the respiratory sounds.

Thus, says he, if the lung merely suffers from pressure, and is not invested with tenacious false membranes, it readily resumes its functions after the removal of the fluid, and the disappearance or the considerable diminution of the morbid sounds are immediately obvious. But when the plastic secretions have a certain power of resistance, the pulmonary lobes are prevented from expanding, and ægophony and bronchial respiration persist, and sometimes even become more evident. Again, if the false membranes have acquired a fibrous or cartilaginous consistency, the lung is incarcerated in an unelastic shell, and when the liquid has been drawn off, the signs discernible on auscultation, and on percussion of the chest, remain unchanged. The greater distinctness of the morbid sounds in the second case, after the evacuation of the fluid, can be accounted for by the fact that the lung is then in closer proximity to the ear.

M. Landouzy, in conclusion, conceives that the explanation of ægophony, offered by Laennec and his followers, is the result of incomplete inquiry, and that it is of the utmost importance to sap this erroneous theory, inasmuch as the special tremor of the voice-sound, persisting sometimes after the slow and spontaneous absorption of the effusion, as it occasionally also does after its immediate removal, Laennec's view might lead to interpretations most detrimental to the patient, as regards diagnosis, prognosis, and treatment.

ART. 61.—*On Pulse-Breath.* By Dr. RADCLYFFE HALL, Physician to the Hospital for Consumption, Torquay.

(*Proc. of Roy. Med. and Chir. Soc.*, Feb. 11, 1862.)

Dr. Hall applies the term "pulse-breath" to an audible pulsation communicated to the breath as it issues from the mouth. It is unconnected with any cardiac murmur or abnormal pulmonic sound. The sound is that of a gentle gushing of the breath, synchronous with each pulsation of the heart. The degree of audibility varies in different cases, and in the same case under varying circumstances. Dr. Hall has heard it at a distance of fifteen feet, and so subdued as to have to listen close to the patient's face to hear it. The author relates the details of three cases in which he met with this phenomenon. In two there were tubercular cavities; in the third, cardiac disease, with enlarged liver and anasarca.

From these cases Dr. Hall infers that pulse-breath is due either to the impulse of the heart communicated directly to an empty pulmonic cavity, or to the same impulse conveyed through the blood-vessels to the air-cells and passages. In the excavation variety, he regards the essential conditions to be, that a cavity of sufficient size and firm walls shall be situated sufficiently near to the heart to receive its impulse directly, and that the cavity shall be sufficiently empty to throw the air which it contains into a sonorous pulse, which becomes

audible if the mouth be kept open. Just as an india-rubber bottle, with a tube in it, might be made to expel its contained air in rhythmical gushes if struck on the outside in rhythmical order. In the non-excavation variety, Dr. Hall accounts for pulse-breath by the regurgitation of blood from the hypertrophied left ventricle into the lungs during systole, owing to the defective state of the mitral valve. At the same time that the blood was thrown back by the left ventricle, blood was being urged onwards by the hypertrophied right ventricle into the pulmonary arteries. The result of the habitual engorgement of the entire circle of pulmonic vessels would be, either that such a refluent pulsation from the left heart would meet the onward pulsation from the right heart, or that the congestion of the pulmonary veins checked the circulation so as to render the pulsation of the pulmonary arteries sufficiently manifest on the air-cells and tubes as to produce a sonorous pulse in the air which they contain. Dr. Hall also suggests that the explanation of the non-excavation variety may be given thus: an habitually distended condition of both auricles, augmented at each ventricular systole, might impart the impulse of the heart directly to a densified upper lobe of the left lung, and by so doing, occasion a vibration of the air contained in its tubes, at the same instant that the pulse is communicated through the blood-vessels.

(c) CONCERNING THE CIRCULATORY SYSTEM.

ART. 62.— *On Anæmia and Bloodletting.*
By Dr. THOMAS K. CHAMBERS, Physician to St. Mary's Hospital, &c.

(*Medical Times and Gazette*, Jan 11, 1862.)

After relating a case of anæmia, without obvious organic lesion, Dr. Chambers proceeds to make certain clinical remarks, which are well worth reading and pondering upon:

"To the mucous membranes I am disposed to attribute the condition in which we find our present patient. The two circumstances to which I have traced the illness both act directly or indirectly on this tissue. The mental exertion involved in an unusual responsibility thrown on a conscientious person would arrest the action of the involuntary muscles which carry along the mass of food through the alimentary canal. You know well the time your food is in leaving the stomach if you are called to an important midwifery case just after a hearty meal; and several commercial and literary men have complained to me of attacks of vomiting (that is, temporary paralysis of the stomach), when they took dinner alone, and so were apt to let the mind dwell deeply on some interesting subject; and they have told me in wonder that they could dine out, and eat and drink all sorts of rich things with impunity. They did not seem aware of the physiological value of frivolous conversation. At the same time that the moral causes thus impeded digestion, the unwholesomeness of the air in the close shop poisoned the mucous membrane, diminishing their vitality, and causing them to be abnormally covered with a thick layer of mucus. Remember that, in spite of their name, it is not the

business of mucous membranes to secrete mucus; the more perfect is their condition, the more favorable are the surrounding circumstances, the less they do so. From many persons' lungs not a drachm of expectoration is thrown up in a month, and the vast surfaces of the intestines and bladder are equally innocent of even microscopic traces of mucus in the typical health we desire to experience. It is only when the presence of some material agent diminishes their vitality, that the mucous membranes exhibit on their surfaces that peculiar substance whence they take their appellation. And the greater the diminution of life, the greater the secretion; a slight cold in the head will be accompanied by slight catarrh, a severe one by excessive catarrh; and the nearer the approach to death, the nearer it is, so that the death rattle, or overpowering collection of mucus in the bronchi, is a popular warning that all is over. Be careful not to look upon mucous secretion as augmented life; it is, in fact, a partial death.

"Well, the poisoning air having covered these slowly moving mucous membranes with a thick tenacious coat, the entrance of alimentary substances into the veins and absorbents was impeded, and our patient starved in the midst of plenty. So all the usual signs of starvation followed. First, hunger—by no means a constant accompaniment of chronic deprivation of food, yet sometimes present, as here; then anorexia, a much more frequent phenomenon; then paleness, languor, weariness, and pain in the stomach; then anasarca, and, in short, the other more marked symptoms of anæmia.

"You may observe that the loss in those constituents of the body, which are of a nitrogenous chemical composition, is more marked than that in the hydrocarbonaceous fat. The reason is, partly, that the destruction of adipose vesicles is somewhat concealed by the saturation of the tissue with serum, which gives it a false plumpness—partly, that fat, being absorbable without much, if any, alteration, is easier taken up than fibrin or albumen, which require a chemical solution before they can be absorbed. So that, though starved, our patient looks but little emaciated.

"All that I have said before, of course, has for its end the treatment. My aim in anæmia is to introduce as quickly as I can the largest possible amount of—1, nitrogenous food; 2, iron; 3, chlorine. When I say 'introduce,' I do not mean 'throw in,' or get swallowed, but assimilated in the system.

"As regards the first, it is obvious that, if I had written down ever so many 'ordinary diets,' a patient to whom the very sight of food was an abomination, would have gained nothing by it; she would simply have gone without. I directed, therefore, no meals at all, and no solid food, but a cup of milk with some lime-water in it, to be given as medicine every two hours, and a pint of beef-tea in small, divided doses during the day. After two days she managed an egg also daily, and after twelve days of gradual additions of this sort, you will find her on full allowance of mutton chop, porter, beef-tea, and milk.

"Iron is required to supply the new growth of red discs, which we hope for, with their metallic constituent. You cannot get it into the system in any way as quickly as the Mistura Ferri composita of the

London Pharmacopœia. Large doses of the more soluble salts have an action on the mucous membranes which not only prevents them being taken up, but also arrests the digestion of food. Evidence of the latter is found in loss of appetite and feverishness, and of their own rejection in the blackening of the stools much sooner than by the form I have approved of. So, in spite of the elegant preparations which are constantly put before us, as recommended by their solubility, such as the chloride, acetate, citrate, phosphate, and other salts of iron, I prefer the unchemical mixture. It seems as if the carbonate which is preserved from decomposition by the sugar, and the finely-divided oxides diffused through the thick liquid, were peculiarly easy of solution in the water saturated with salts and carbonic acid, which (and not pure water) we must remember is the solvent to be considered.

"I have found that some cases which did not improve so quickly as I could wish under the above treatment, made a sudden start of improvement when to it was added the administration of chlorine in the form of warm hydrochloric acid baths. More iron is taken up, the blackening of the fæces ceases, and therefore, perhaps, it may be that the presence of more acid in the system attracts more of the metal. But in a few cases I tried, for experiment, the hydrochloric acid baths alone, and even then it was beneficial, seeming to confer muscular strength, like what are commonly called tonic drugs. I cannot but think, therefore, that it supplies a distinct want in the system, that it is a directly restorative medicine in anæmia.

"Nor is it difficult to make this empirical observation accord with rational pathology. In anæmia the blood is more watery than natural; the proportion is deficient, not only of organic matters, but of salts. Chloride of sodium is the most important of these, and the supply of one of the constituents of this material, we may reasonably imagine, is an aid to the renewal of life, which is the end of all medication.

"Besides the above-named medicines, you will see I have ordered Pil. Aloes cum Myrrha, gr. iv, omni nocte sumenda. Now, do not suppose that this is ordered merely as a purgative, and that any other purgative would do as well. On the contrary, most purgatives do harm in anæmia. Gamboge, castor-oil, sulphate of magnesia, colocynth, mercury, and several others, which produce serious elimination and augment secretion generally, would do harm just in proportion to their activity. It seems established by the experiment of making them act as purgatives when injected into the circulation, that their soluble principles have a destructive agency over the blood; whereas the soluble alkaloid in aloes (aloine) is, in fact, a bitter tonic, and the purgative power of the drug resides in its insoluble resin. Its action is very slightly eliminative—in moderate doses it only slightly augments the solid brown excreta of the colonic glands, and produces fæces feculent in smell and of consistent form; whilst, at the same time, it restrains, by its bracing bitter, the formation of mucus, as you may clearly see by its action on moist piles, how it dries them up and makes them smart. And by the more vigorous peristaltic action, and by the solid mass passed along the gut, the already existing mucus is cleared away. Aloes, therefore, is employed strictly as a clearer of

the intestinal, especially of the colonic, membrane. It is joined with myrrh, partly to divide it minutely, and make a small dose go farther, and partly to get the advantage of the extra resin.

"November 28th.—A fortnight ago I lectured about an anæmic patient. She was then showing a tendency to lose her title to the name, and now she certainly cannot claim it, and has earned our confidence in the statement that her natural hue is rosy. She leaves the hospital to-day, having manufactured enough red discs to colour her blood throughout very sufficiently.

"What amount of manufacturing industry does this show? Let us reckon. She weighs 8 stone, or 1792 ounces; of this $\frac{2}{7}$ths, or 512 ounces, is blood; and of this blood $\frac{133}{1000}$, that is to say, 60 ounces, should be red globules. Now, the analyses of MM. Andral and Gavarret show that, in cases of anæmia of at all a marked character (as this was), we may expect, at least, three-quarters of the red discs to disappear; so, that when she came into the hospital, it may be fairly assumed that she did not possess above 15 ounces; and now I think with equal fairness she may be assumed to have got up to 45, which is conceding that she still wants a quarter of perfect health. By this reckoning she must have made 20 ounces of red blood discs—that is, the most important organic constituent of upwards of 150 ounces of blood—in a month!

"Mark the power of renewal which the human body has under favorable circumstances, and learn from this not only the curability of anæmia when it is a disease, but also the facility of repairing artificial loss of blood when it is employed as a remedy. It has been the fashion lately among certain medical declaimers to name the physician who draws ten or twelve ounces of blood from the arm as a deadly villain, who necessarily *ex vi termini* takes away "the life," or that which cannot be replaced. Not only pill-dealers and quacks have raised this outcry, but it has been joined in by some whose knowledge of physiology ought to have taught them better. It ought to have taught them the fallacy of the popular notion, and the scientific argument by which to refute it. You will clearly perceive from the calculations through which I have taken you, that by proper management no loss is so easily repaired, and that if he saves his patient two nights' sleeplessness or pain, the price of a venesection is well spent.

"Only note this, that *if the loss is to be repaired, the means of repair must be given.* When I bleed, you will observe that I take down the diet-card, and accommodate it to the circumstances, being very careful that the patient has the wherewithal to replace the globules I am detracting. I supply with one hand what I am taking away with the other. I begin to cure the artificial anæmia, which I feel myself called upon to produce, at the same time that I am producing it. 'Blowing hot and cold,' you will say. Precisely so—that is what I intend. I blow cold with my bleeding, not for the sake of blowing cold, but because it is the inevitable accompaniment of the remedy. I employ the remedy, not to produce anæmia, but for other quite different purposes, which I think are worth the cost. And I blow hot to compensate as well as I can for the evil I think it desirable to do, on the principle

"Necesse est facere sumptum, qui quærit lucrum."

"I do believe that the sad effects of the excessive venæsection of our fathers, which with justice have been thrown in the teeth of the medical profession, was due quite as much to the starvation as to the bleeding. I have a most vivid and painful recollection of seeing, when I was a student in Paris, M. Chomel and others treating pneumonia. I could not at first understand why, in France, so much more marked, and, in my opinion, so much more deleterious effects were produced by the venæsection than in England. At that period we had at home ample opportunities of seeing bloodletting practised; but I never saw such prostration produced by it at St. George's as I did at the Hôtel Dieu. Then I noticed that the order for '*Saignée*' was accompanied by '*Diete absolue.*' I almost doubted my knowledge of French, and was obliged to ask several of the bystanders before I could believe that this meant an *utter deprivation of all food!* There was an instantaneous explanation of the comparative toughness of my countrymen; for never in our worst days did we carry the Sangrado practice so far as that. We did not give enough, perhaps, but we never commanded that it should be kept intentionally out of our patients' way.

"The bad practice of starving and bleeding at the same time, took its rise from the errors of Allopathy. In this system a disease is an enemy to be overcome—a something *to be combated by* an agent which is as opposite to it as possible. Bleeding was found by experience to be useful in certain morbid states; therefore it was useful in virtue of its opposite effects. Anæmia and depression of life, are the most constant effects of bleeding; therefore anæmia and depression are the benefactors to be sought for, and whatever aids bloodletting in producing anæmia and depression, is a good companion to it. It is unnecessary to say, that of course starvation was the first agent thought of, adopted *a l'outrance* by the logical French, and with more hesitation by our fortunately illogical countrymen. The abuse has brought about a reaction; and that treatment which was considered at one time so specific that its gravest faults were viewed as virtues, now runs a risk of being denied *all* virtue, because of its avoidable faults."

Art. 63.—*A case of Primary Softening of the Heart.* By Dr. Harley.

(*Proceed. of the Pathological Society of London, Lancet*, Feb. 1, 1862.)

Case.—A gentleman, aged above fifty, had died from the effects of extensive chronic pleurisy of the left side of the chest. At the autopsy, the heart appeared at first sight to be the seat of fatty degeneration. It was flabby, remarkably soft, and friable. On microscopic examination, however, it proved not to be a fatty heart, but an exceedingly good example of that rare form of disease described in Germany as primary softening of the heart, the chief peculiarity being the great tendency of the muscular fibres to fall apart, and break up into very small fragments.

Art. 64.—*Case of Abscess at the base of the Heart.*

By Dr. Inman, Physician to the Royal Infirmary, Liverpool.

(*Medical Times and Gazette*, March 1, 1862.)

The following case, though somewhat imperfect, deserves a record in the annals of medicine:

Case.—A man, æt. 35, or thereabouts, having an indescribable look of serious illness, and a sallow jaundiced complexion, presented himself for admission in the usual way. He complained of "ague shakes" for three or four hours every day, which he had experienced for many (seven or eight) months. He was a labourer living in a healthy part of the town—had never been abroad, nor had experienced dysenteric symptoms. Further examination was deferred until I saw him in his ward. He was in bed, but quinine and chloric ether were ordered as medicine. Three days later I found him in "a shake," which closely resembled the cold stage of ague, and he wore the same look of extreme illness which I had noted before. After a series of questions pointing to a malarious origin, to the probability of organic disease of the stomach, liver, lungs, or bowels, as to the occurrence of hemorrhage, diarrhœa, &c., I could obtain no clue to the nature of the case. Percussion over the anterior surface of the body led to the inference that there was no physical change in the corresponding parts of the lungs, heart, or liver. The respiration was normal; the pulse regular; the tongue clean. I could detect nothing wrong in the action or sounds of the heart. The nurse told us that his appetite was bad; that he was very weak; that his medicine seemed to agree with him, and that he had not had a rigor on the preceding day, an occurrence, he told us, which had not previously occurred since the commencement of his illness. I did not prosecute my inquiries farther, on account of the man's piteous condition, and the difficulty he had in understanding questions and framing answers (*e.g.*, "Have you ever had dysentery?" "Yes." "Do you know what that is?" "No." "Have you been purged?" Yes." "When?" "I don't know." "How often in a day?" "Once.") His intellect seemed to be affected as in the early stage of typhoid fever.

The sole diagnosis I could form was, that the man was very seriously ill, and that the case was a puzzle; but I left directions with our zealous pupil, Mr. Nash, to endeavour to procure further particulars from the man after the rigor had gone off, or from his friends when they visited him. Next day, however, without any marked alteration in his condition, and before further information was gained, the man died suddenly.

From circumstances, the post-mortem had to be made hurriedly by the house-surgeon (Mr. R. Harrison). He reports that the liver was somewhat conjested and nutmeg-like. The lungs contained a great deal of diffused or infiltrated pus. The pulmonary arteries were filled with a firm white coagulum, and the heart was of a normal size, and externally seemed healthy. The other viscera were healthy. On cutting the heart open, however, it was found that an extensive abscess had existed in the lymphatic glands about the base of the pulmonary artery, and this abscess communicated with the right ventricle behind one of the valves of the pulmonary artery.

Around the opening a fleshy vegetation existed, about the size of a large horse-bean.

The appearance of the abscess internally, which resembled a supra-renal

capsule cut open, and the absence of vascularity about its margin externally, impressed Mr. Harrison with the conclusion that the disease was not of recent origin; and on this point, after examining the heart, which was duly preserved, I cordially agreed. No pus was found in the pulmonary artery, nor was any abscess found elsewhere.

This case is remarkable and peculiarly interesting on many grounds:

1. Assuming that the purulent discharge into the right ventricle had existed for a long time—the daily rigor is a fact of curious surgical importance. The total absence of all symptoms of pyæmia is equally important, and if this case stood alone, ought to lead to a close investigation as to the supposed causation of that class of symptoms to which the name of pyæmia has been assigned. The absence of diffused abscesses is also remarkable. The case would still farther lead to the belief that the injection of living pus (so to speak) from an abscess into the blood does not necessarily coagulate it. (The coagulum in the pulmonary artery is too common an occurrence for it to be attributed to an unique phenomenon.)

2. Assuming that the abscess had burst but recently—these points are equally curious.

3. The qualified jaundice could not fairly be assigned to hepatic disease—could the modified condition of the blood have anything to do with it?

We may so conclude when we find this sign so commonly attending such accidents as poisoning by snakebite, &c.

(D) CONCERNING THE ALIMENTARY SYSTEM.

ART. 65.—*Acute Atrophy of the Liver.*

By Dr. WILKS, Assistant-Physician to Guy's Hospital, &c.

(*Proceedings of the Pathological Society of London. Lancet*, Dec. 7, 1861.)

This is one of the most remarkable diseases to which the human body is liable: a form of jaundice of the most acute kind, attended by symptoms of blood-poisoning and derangement of the nervous system; in which the liver is found reduced to a very small size, and to have undergone a most complete disintegration of its structure, so that sometimes on microscopic examination not a single healthy cell can be discovered. It has been shown also of late by Frerichs that a decomposition takes place, whereby new products are formed, which are carried by the blood into various parts of the body, and especially to the kidney, whose office it is to eliminate them. These crystalline bodies, being discovered in the urine, assist in the formation of a diagnosis of the case.

CASE 1.—Elizabeth K—, æt. 17, was lately seen by Dr. Wilks, with Mr. Bisshopp, of South Lambeth, suffering from this form of disease. She had only been ill with jaundice for six days, and for the first four no very urgent symptoms were present; she then had a fit, became unconscious, and remained so until Dr. Wilks saw her. She was in a state of coma, with

stertorous breathing, foam on the lips, teeth clenched, tongue brown, pulse quick, and skin jaundiced—a combination of symptoms suggesting suppression of urine as well as hepatic disease. On percussion over the liver, only a very narrow region of dulness was discovered, indicative of the great shrinking of the organ. She was a married woman, and had had some quarrels with her husband, so that a strong mental influence was discovered as predisposing to the complaint. She had also missed three menstrual periods. In the evening she miscarried, and on the following day she died.

With great difficulty permission was gained to make an incision in the abdomen, so as to remove a portion of liver, a kidney, and the uterus. The latter showed that abortion had lately occurred. The liver was very much atrophied, and when examined by the microscope, not a single healthy or entire cell could be found; nothing being observable but disintegrated hepatic tissue, oil-globules, and the crystalline bodies, such as Frerichs describes under the name of *leucine* and *tyrosine* substances, which hitherto have only been made by the chemist by artificial means. The kidneys showed the tubules completely filled by disintegrated matters, and the same form of crystals. The urine, which had been drawn from the patient during life, presented casts of tubules, and, when evaporated, the substances above mentioned in very large quantities—needle-shaped crystals of tyrosine and rounded masses of leucine; the latter were mostly found in the film which formed on the surface.

Case 2.—Ellen L—, æt. 23, admitted under Dr. Wilks' care into Guy's Hospital on June 29th, and died July 7th. She had not been married long; but quarrelling with her husband had already occurred, and she was said to be a woman of dissolute habits. For the first five days, although extremely ill, she was thought to be suffering from simple jaundice. She then, however, was seized with severe vomiting, and fell into a typhoid state; delirium came on, and she died.

The *post-mortem* examination showed ecchymoses on various organs of the body. The liver was shrunken, and lying against the diaphragm; it weighed only 1 lb. 3 oz. (This was exhibited to the Society.) Its section showed a peculiar red and yellow mottling, always observed in this disease, and the microscope was unable to detect but very few cells which were not completely broken up.

Case 3.—Elizabeth B—, æt. 30, admitted under Dr. Barlow on July 12th, and died July 14th. She was a servant, had suffered from jaundice for three or four weeks, and when the severe symptoms appeared she was brought to the hospital. She was then in a dying state, and the nature of the case was evident.

The body presented purpuric spots in various parts. The liver was shrunken, so as to weigh only 1 lb. 9 oz.; it showed on the surface, as well as in the interior, a peculiar mixture of red and yellow colours. The tissue was quite disintegrated, so that few entire secreting cells were discoverable. The kidneys were large, and tubules gorged with dark granular and biliary matter. The urine also contained tubular casts, and masses of epithelium and pigment.

ART. 66.—*Complete Obstruction of the Bile and Pancreatic Ducts.* By Dr. HARLEY, Professor of Medical Jurisprudence in University College, London.

(*Proceed. of Pathological Society of London*, Jan. 21, 1862.)

This is a most instructive case, especially as showing how valuable an adjunct chemistry is to the other modes of diagnosis in disease of the abdominal organs.

CASE.—The case was one of great obscurity. The patient, a gentleman, 50 years of age, had up to fourteen or sixteen months before his death been very healthy. The first symptom of ill-health was a little uneasiness after food. He then became yellow, and this increased to actual jaundice. At the early part of this illness the gall-bladder was not only to be felt but was actually visible under the false ribs; but after an attack of purging of what was called bile, this swelling disappeared, and was never again visible. There was no tumour, but at this stage of the disease one eminent physician believed it to be organic disease of the pancreas or liver. The stools were clay-coloured, but except this and the jaundice there were no symptoms of biliary calculus. Dr. Harley saw him first in October last. The patient was then passing a great deal of fatty matter by stool, which was at first supposed to be from the bile; but on examination it turned out to be a fish-oil—cod-liver oil modified; nothing being left but margaric and stearic acids. It was then supposed that there was a stoppage of the pancreatic duct. In the urine was found the biliary acids as well as the colouring matter of the bile, and the diagnosis accordingly was obstruction both of the pancreatic and of the bile duct. Fourteen days later there was tenderness over the region of the liver. The urine was several times examined, and was found to contain tyrocine and leucine. As Frerichs stated that this was found in contracted liver, Dr. Harley examined the patient again, and found that the liver was getting smaller. Another point of interest in the case was that the urine, which was constantly examined, was free from albumen, The uric acid was in small quantity only, which favoured the idea of there being no malignant disease of the liver. There was passed in the day twenty-seven grammes of urea, which showed that the digestion was good, but gradually the urea diminished, and at length only fifteen grammes were found in it. Three weeks before death sugar was found in the urine. Dr. Harley had, in other cases of chronic disease, found sugar in the urine a little time before death. After death in this case the urine was highly saccharine. At the autopsy it was found that the gall-bladder mas much enlarged and was filled with tarry, viscid bile. The cystic duct was much dilated, and the common bile duct was at least two inches in breadth. The liver was small and dense, and bile oozed out of it in every direction. After death distinct crystals of tyrocine and cystine were detected in the liver. The head of the pancreas was enlarged, and on section a quantity of pus flowed out. There was as great dilatation of the pancreatic duct as of the bile duct. On opening the duodenum, there was found a sinus communicating with an abscess in the head of the pancreas. The tumour of the pancreas was inflammatory only. In the kidneys were found abscesses, and the structure which was left was extremely fatty. On examining the urine after death, scarcely any albumen was found.

ART. 67.—*Hydatid of the Liver presenting unusual symptoms.* By M. A. CHEREAU.

(*L'Union Méd.*, June 25, 1861; and *British Med. Journal*, Sept. 7, 1861.)

CASE.—M. X., æt. 24, an *externe* of one of the Parisian hospitals, was seized suddenly in 1856 with violent pain in the epigastrium, followed by slight jaundice. In three or four days the symptoms left him. In 1860, a similar attack occurred, and was relieved by laudanum. He attributed the symptoms to the passage of biliary calculi. In January, 1861, he had symptoms denoting congestion of the liver, and icterus with vomiting; for which leeches and laudanum were used with relief. In the middle of March, the symptoms set in more severely than before; there was intense jaundice; the urine was dark coloured, scanty, and passed with difficulty; there was dull pain in the epigastric and hepatic regions, increased either spontaneously or by moving the body; the liver was slightly increased in size; the epigastrium was sonorous on percussion. Violent colicky pain set in, and did not cease for twenty-four hours. Opiates and alkaline remedies were given. In a month (on April 15th) a daily attack of fever set in, attended and followed by severe pain in the region of the spleen, radiating to the left shoulder. Suppuration of the liver was suspected. On the morning of April, 23rd, he was surprised on awaking to find himself free from severe pain. In the course of the day, his symptoms were improved, and the febrile attack was but moderate. The next morning, he passed *per rectum*, after a painful effort, some hard colourless masses, followed by an enormous quantity of soft coloured matter among which was observed a transparent pouch having all the appearance of a hydatid cyst, and probably as large, when filled with fluid, as a man's fist. After this, recovery soon took place. M. A. Chereau, who relates the case in full, gives the following diagnosis:—A hydatid cyst in the left lobe of the liver pressed on the biliary ducts and perhaps on the gall-bladder itself, so as to obstruct the passage of the bile and produce symptoms resembling those of biliary calculus. Inflammation was set up round the cyst; adhesions were formed with the transverse colon; perforation took place; and the cyst was discharged.

ART. 68.—*Case of complete recovery after the passage per anum of six inches of the Ileum.* By Dr. HEARNE, of Southampton.

(*Proceedings of Pathological Society of London, Med. Times and Gazette*, March 8, 1862.)

The six inches of the ileum which were passed per anum, and the cicatrised parts of the intestine relating to this portion, were sent up to the Pathological Society, and exhibited there by Dr. Hare. The account given is as follows:

CASE.—A lady, æt. 41, presenting some tuberculous symptoms, had engaged Dr. Hearne to attend her in her confinement, expected in November, 1860, when, on October 20th, he was summoned to see her for acute peritonitis, the pain and tenderness being greatest over the right side of the abdomen; on the 30th she was delivered, naturally, of a living child, but the pain and tenderness of the abdomen continued very great, and the prostration extreme; there was much sickness; constipation at no time lasted more than two days, and at other times there was diarrhœa. On the fourteenth day of the attack, she passed the portion of intestine men-

tioned above, and she subsequently appeared to be in the greatest danger of sinking into complete collapse; but, under the influence of opium and stimulants, she gradually improved, and might be considered convalescent, as regards her abdominal symptoms, on about the twenty-eighth day of the attack. The evidence of phthisis, however, became more marked, and she died of that disease very nearly three months after passing the portion of intestines. This portion was about six inches in length, of a very dark purplish gray colour, somewhat sloughy, but presenting a perfect cylinder, the ends being uneven and rugged. The specimen, however, of especial interest was the one showing the part of the intestinal tract whence the intussuscepted portion had been separated, and this separation was found to have taken place at the lower part of the ileum, about fifteen inches above the caput coli. The small intestine there was somewhat puckered on one side into a kind of small pouch, but the line of union (where the separation had occurred), which ran somewhat obliquely across the intestines, was so complete that it could scarcely be detected except by holding up the intestine between the eye and the light, when the thin character of the intestine clearly pointed out the line (or "seam") where the union had taken place. Just below this line a very peculiar body was found; it was about three quarters of an inch long, and rather more than that transversely; it was perforated vertically (*i. e.*, in the same direction as the axis of the intestines) by a hole which would admit a moderate-sized quill, and both the perforation and the exterior of the small body were covered with mucous membrane. The little body was firmly adherent by one of its sides to the interior of the intestines, but elsewhere was free and projected into the cavity of the intestines. At first it seemed difficult to account for the presence of this peculiarly-shaped body; but on further consideration it appeared almost certain, according to Dr. Hare, that it had been produced by the intussuscepted portion of the intestine having laterally formed an union over a limited space by means of effused lymph with the sheath of the invagination; the part of the invaginated bowel *below* this adherent portion had sloughed off and had been passed per anum; while the *upper end* of the invaginated bowel, just *above* the adherent portion, had separated from the rest of the intestine exactly at the neck of the invagination where the remarkably perfect union (already described) between the sheath of the invagination and the intestine above, had occurred. The effused lymph having become organized, vascular connexion was established between the remnant of the invaginated part and the intestinal canal, and the former (presenting in reality a complete, though contracted transverse section of the intussuscepted part), and thus accounted for the curious and perhaps, unique phenomenon of a cylinder intestine, growing, as it were, within the intestinal canal.

ART. 69.—*Cases illustrating some affections of the Cæcal portion of the Intestines.* By Dr. REED.

(*Proceedings of the Royal Med. and Chir. Society*, Jan. 14, 1862.)

CASE 1.—A. B., æt. 18, the son of a gentleman residing in Surrey, being in perfect health, and having no hereditary tendency to disease. In the evening of August 12th, 1858, he ate a large quantity of unripe plums. During the night, having pain in his bowels, he took some strong medicines, which acted very violently, dislodging a great many pl Mr. Nowell Stowers, of Kennington, saw him the following mor

was suffering from constant tenesmus, and severe pain in the bowels of a colicky nature, especially in the right iliac region. On the evening of the following day I saw the case; and subsequently attended in consultation with Mr. Stowers. There was a distinctly defined swelling about the size of a small orange, in the region of the cæcum, dull on percussion, and painful on pressure; febrile symptoms, with diffused peritonitis, came on, but no sickness. For some days subsequently the swelling increased considerably in size, and the general symptoms became much aggravated. Tympanitis, hiccup, and prostration ensued, and liquid muco-feculent evacuations, tinged with blood, passed frequently. The treatment consisted of calomel and opium, given in small and frequently repeated doses. Opiate suppositories were used, also turpentine stupes, succeeded by warm fomentations and poultices; perfect rest in the prone position; fluid animal and farinaceous diet, all solids being prohibited. On the fifth day the patient showed evidence of being slightly under mercurial influence, and from this date the symptoms gradually diminished in intensity; but a solid swelling, about four inches in circumference, remained in the right iliac region, painful on pressure. Blisters, iodine, and mercury were applied locally, and various measures to support the strength. At the end of three weeks he was allowed to sit up in a chair. After an action of the bowels it was discovered he had passed a portion of intestine, about ten or twelve inches in length, without pain, or being himself aware of any unusual occurrence. He was again strictly confined to the recumbent position, with fluid farinaceous diet only for a considerable period. Eventually he entirely recovered, and is at the present time in perfect health, three years having elapsed. The preparation exhibited consists of the portion of intestine voided, being about ten inches of large intestine, together with the cæcum and vermiform appendix; of the former only about one third of the calibre of the canal, while the entire tube of the appendix is present. It has been given to the Royal College of Surgeons for the museum, where no preparation of a similar kind exists.

Case 2.—A. J., æt. 14, a healthy girl, in April, 1846, was suddenly seized with pain in the right iliac region, her bowels having been previously very constipated. She took some strong aperient medicine, which produced no effect. I saw her the day following. Being a very nervous, hysterical girl, the early diagnosis was rather masked, but the abdomen appeared distended and painful. After a warm hip-bath and a copious turpentine enema the bowels acted twice freely. Subsequently, frequent doses of calomel and opium, leeches, followed by a turpentine stupe, perfect rest in the recumbent position, and restriction to fluid nourishment, were prescribed. On the following day the abdomen was less distended, and a defined tumour, painful on pressure, about three inches in extent, and dull on percussion, was readily felt in the region of the cæcum. The inflammatory symptoms became gradually more severe, and on the fourth day she appeared to be approaching a state of collapse. The calomel and opium was discontinued, and stimulants were substituted. She rallied under this treatment. On the eleventh day, a portion of intestine, six or seven inches in length, was voided per anum—apparently colon. Severe dysenteric symptoms followed, controlled by sulphate of copper and opium, no solid [illegible] passed. After an anxious period of some weeks, she continued well to the present time.

[illegible] strong, healthy young man, on rising from [illegible] morning, ate hastily several unripe apples. [illegible] was seized suddenly with intense pain in

the right iliac region, and forthwith took some aperient medicine, which acted freely. I was requested to see him a few hours afterwards. He was lying on his back, with his right thigh bent, and complained of extreme pain in the region of the cæcum, increased on firm pressure. No local tumour could be detected. He had vomited the meat breakfast he had eaten, and had an anxious look. He indicated the exact spot where, he said, "he was sure some part of an apple had stuck"—in the region of the cæcum. The pain rapidly increased, acute inflammation set in, with tympanitis, and he died in great suffering on the fourth day. Bleeding, leeches, calomel and opium, the latter in large doses, turpentine stupe, warm poultices, perfect quiet, with fluid nourishment only, constituted his treatment generally. On examination, general abdominal inflammation was found to have existed, but most intense and advanced about the cæcum, which appeared to have been loosely connected congenitally, and was, together with the vermiform appendix and about four inches of intestine (ileum), invaginated in the ascending colon. In the interior of the cæcum, a portion of the core of an apple, about one third of an inch, was firmly imbedded in the free margin of the ileo-cæcal valve, and was with some difficulty removed from its bed.

Case 4.—A lady, æt. 23, very healthy, on the 17th of November, 1849, was seized suddenly with violent pain in the right iliac region, and was attended by a medical gentleman, who prescribed leeches and other remedies. I was requested to see her the same day, and learnt that the bowels had been habitually very constipated during the previous month. There was no hernia, but a distinctly defined tumour, dull on percussion, in the region of the cæcum. On examination by the vagina, the tumour could with difficulty be reached; but the right ovary was readily detected, distinct, and much larger than ordinary. Calomel-and-opium, in small and very frequently-repeated doses, was ordered. Turpentine stupes, succeeded by warm poultices, to the abdomen, and also a large turpentine injection, which dislodged a quantity of hardened fæces, were prescribed, with perfect rest, and fluid nourishment only. The symptoms of inflammation became more severe and diffused; the local swelling increased considerably, attended with most acute pain in the hip, so much so that the patient attributed all her disease to the hip-joint; œdema of the whole thigh, leg, and foot to a great extent followed; and all the symptoms became so aggravated that she appeared *moritura*. The gums showed evidence of mercurial action, and she was able to take fluid nourishment and stimulants *ad libitum*. Sir Charles Locock and Dr. Ferguson saw the case about this date in consultation with me. Shortly afterwards an abscess evidently was forming, and pointing just above the middle of Poupart's ligament. Her state appearing almost hopeless, no satisfactory relief having taken place from the upper bowels for nearly three weeks, a large enema of gruel with turpentine and ox-gall, was administered, and in half an hour nearly two chamber-vesselsful of most offensive fæcal accumulation passed per anum, followed by great prostration; but she rallied under the use of large quantities of stimulants. The pain in the hip and œdema gradually subsided from this period. After five weeks from the commencement of her illness the abscess burst externally; a large quantity of offensive pus mixed with fæcal matter, was discharged, and continued daily. A fistulous opening with the cæcum apparently became established, more feculent matter passing by this outlet than per anum. Her condition varied for a long period. At length she was well, excepting the fæcal fistula, which was most loathsome. After eight months from the commencement of her

illness, Sir Benjamin Brodie saw the case in consultation with me, and advised her having a couch made so as to be recumbent on her face night and day for several months; one-drachm doses of powdered cubebs were administered twice a day, and the edges of the wound touched with nitrate of silver. Her general health improved. The position on the face gave so much relief that she strictly followed the treatment. After five or six months the discharge ceased entirely, and within twelve months she was perfectly well, and has continued so up to the present time.

Art. 70.—*On the use of Perchloride of Iron in Dysentery.* By M. Aug. Baudon.

(*Bull. Gén. de Thér.*, Nov. 30, 1861.)

M. Aug. Baudon states that he has treated a dozen very severe cases of dysentery, characterised by tenesmus, prolapsus ani, bloody stools, twenty, thirty or forty a day, with extreme prostration, by the exhibition of the solution of perchloride of iron, in doses of from twelve to thirty drops in twenty-four hours, in a vehicle of water and syrup; at the same time administering two or three warm-water enemata, daily, containing from twelve to twenty-five drops of the solution, with the addition of laudanum when much pain exists. Five of the cases were children from one to ten years of age, four women, and three men. All of them recovered. His patients were under treatment from four to eight days.

Art. 71.—*A curious case of Worms.* By Dr. Dworzak.

(*Osterreich. Zeitsch. f. prat. Heilk.*, No. 47, 1861; *Gaz. Hébd. de Méd.*, Jan. 17, 1862.)

Case.—A woman, æt. 60, who, without any obvious inconvenience, had passed worms on several occasions during her youth. Four weeks prior to her admission into the ——— hospital (15th February, 1861), she was suddenly seized with acute colicky pains, with obstinate constipation and vomiting, and in the vomited matter were many round worms. For fourteen days there was no action of the bowels, and little amendment in the other symptoms. During this time, a red and painful abscess, about the size of the fist, when at its largest, had been forming in the left inguinal region; at the end of this time the abscess burst, and a *bundle of agglomerated worms*, with a quantity of fluid, having a stercoraceous odour, were discharged, and at the same time the vomiting, colicky pains, and constipation, came to an end. During the twelve following days worms escaped now and then from the same opening. This opening was seated immediately on the outside of the left crural ring; its borders were soft and unequal; its base indurated, grayish in colour, and smeared with a brownish sanies of a suffocating odour. A sound could readily be passed through it into an immovable loop of intestine—evidently a part of the small intestine; for a short time after a meal portions of half-changed food made their escape through the unnatural anus. The condition of the patient improved materially under a tonic plan of treatment, but the opening remained unclosed, for she would not hear of the adoption of any surgical measures for its relief.

ART. 72.—*On the use of Podophyllin in Constipation.*
By Dr. AND. CLARK, Assistant Physician to the London Hospital, &c.

(*Medical Times and Gazette*, Jan. 4, 1862.)

In some notes of the results of practice among the out-patients of the London Hospital, Dr. Clark says:—"If after the regulation of the diet, the sufficient use of fluid, kneading and friction of the abdomen, daily exercise, and the due solicitation of nature at regularly recurring times, the constipation remains, you must have recourse to drugs." Now the drug best fitted for the purpose, is that which will act without irritation, slowly, moderately, and by the production of a formed stool, after the manner of nature. The objections to ordinary laxatives are almost innumerable; sometimes they act too freely to permit of subsequent spontaneous regularity for some time, distension being required to excite the contractility of the bowels; at other times the bowels are teazed by frequent ineffective actions, and mucous discharges are induced. In some cases the muscular contractility is exhausted, and the patient is afflicted with flatulent distensions of the bowels. In other cases the head is distracted with uneasy sensations; or there is a general nervous restlessness, for relief from which the patient flies to larger doses of more powerful purgatives, till at last life becomes little else than continuous suffering, complaint, and misery.

"Now there is in my experience no single remedy for constipation so free from these objections as podophyllin. It is not a specific for constipation, and it is not in all cases free from some of the objections attached to other remedies. But in the great majority of cases of simple constipation, it fulfils the conditions required of a safe and effectual remedy, by operating slowly, easily, and after the manner of nature.

"Podophyllin is an amorphous resinoid powder, obtained by evaporation from an alcoholic solution of the root of the May apple (*Podophyllum peltatum*). In America it is used in ten-grain doses as a cathartic, of similar characters to the resin of jalap; but for use as a natural laxative, the maximum dose is one grain. If more than this is given, it produces griping and loose stools. For most persons a grain is too large a dose. It is better to begin with half-grain doses made into a pill with extract of taraxacum, which must be taken during breakfast, that it may operate next morning after that meal. For the first few days, the operation of the drug may be accompanied by a little griping and by unformed stools. Should these continue to the fourth day, administer only quarter-grain doses, and combine them with an equal quantity of ipecacuanha. If after, the drug does not operate in the manner described, it is not likely to prove successful, and had better be relinquished. When the right dose is determined, its use may be continued without fear of injurious consequences; and instead of requiring to be increased, may after a time be diminished without affecting the success of its operation."

(E) CONCERNING THE GENITO-URINARY SYSTEM.

ART. 73.—*Cases of recovery from Bright's Disease.* By Dr. WILLIAMS, Physician to the Swansea Infirmary.

(*Lancet*, Nov. 23, 1861.)

Dr. Williams relates six cases, and says, that he has seen many others during the last twenty years.

CASE 1.—Twenty years ago, a medical student in whose fate I was deeply interested, and whose age was twenty-two years, became affected with an illness under the following circumstances. At the end of the winter session in one of the London hospitals, at which he had been severely working, and while enjoying his ordinary health, he was seized in one night with bloody urine and frequent desire to pass it. The urine was first discovered to be dark in colour and much reduced in quantity on rising in the morning. His suspicions were excited as to this symptom, and he went to Dr. Barlow, who tested the urine, and found, upon the addition of nitric acid, that it was literally converted into one clot of albumen. My friend on the following day visited Dr. Bright, who at once pronounced the urine to be highly albuminous, and recommended the patient to leave town for the country, holding out no hope of recovery. I then accompanied my friend to Dr. Prout, who, after careful examination, said that the case was one of hæmotrophy of the kidneys, the urine being bloody, highly albuminous, and of high specific gravity. Satisfied, now, that he had become the subject of Bright's disease, my friend resolved to leave for the country. Neither Dr. Bright nor Dr. Prout would hold out any hope of recovery. Dr. Prout said that he had known several people who had gone on for ten years in comparative health, the urine being constantly albuminous. Dr. Golding Bird, upon whom we called just before our departure from London, manifested the strongest and warmest interest in the case, and stated, after a patient examination, that the case was one of "acute congestion of the kidneys." Neither of these physicians recommended lowering treatment.

Our return to the country was made on the tenth day after the first appearance of the symptoms. The urine was still scanty—less than three quarters of a pint in the twenty-four hours; the dropsical symptoms every day increased; the urine was as dark as porter and highly albuminous; the skin was dry and feverish; the breathing was growing in tightness and difficulty. In a fortnight further the body had greatly increased in size, while the urine had scarcely at all augmented in quantity. Convinced that he was going to die, greatly alarmed at the swelling and the difficulty of breathing, the patient determined to resort to the compound jalap powder and warm baths. From this moment a change for the better became evident; the skin began to act, and the urine increased in quantity. Thus he continued for three months.

About this time he again visited Dr. Prout, who reported that the case was going on favorably. The urine had increased in volume; the skin was acting; the dropsy had diminished very considerably; the quantity of albumen in the urine had also become much smaller, although large enough still in amount to form a clot, and it had become smoky in colour, indicating a great reduction in the proportion of the red corpuscles. He prescribed the citrate of potash and iron.

Dr. Prout, on this occasion, introduced us to Lord S—, who was (in 1843) labouring under precisely the same symptoms as my medical friend. We then again repaired to the country, a constant correspondence being kept up with Dr. Prout. For six months the patient continued gradually to improve. At this period the dropsy had entirely disappeared, he had become pale and thin, the urine had greatly increased in quantity, and micturition was frequent both during the day and the night. The urine, allowed to stand in a long conical glass, deposited masses of casts, epithelial scales, oil-globules, red corpuscles, and granules. Possessed of a good microscope, my friend made repeatedly beautiful drawings of these objects. It would be easy to prove, by reference to his elaborate notes, that he fully anticipated Dr. Johnson in his definition of the fibrinous casts. He invariably stated that they consisted of fibrin which had undergone coagulation in the uriniferous tubes; that the epithelia constituted the scaly lining of these tubes; that the oil-globules had been secreted by these cells into their interior, as Bowman had explained as regards the oil and cells of the liver.

For eighteen months this case was most minutely watched. During this time the urine averaged three pints in twenty-four hours; it continued to present a slight muddy or smoky tint, in specific gravity it never fell below 1012; the albumen gradually lessened until at length it contained no clot, but only a slight granular opalescence was formed under heat and nitric acid. The patient was still pallid, dyspeptic, and nervous; but active in intellect and bodily habits.

It could not be said that the albumen had entirely and completely disappeared from the urine until two years had elapsed from the first attack. For several years (certainly three or four) after this date, there persisted a slowly-decreasing amount of renal irritability—that is, micturition frequent at night, and the urinary secretion was rapid and excessive in the day if a *stimulus* at any time were taken. At the end of two years it was easy to detect, in specimens of the urine which had been allowed to stand for some hours, a few casts, cells, and oil-globules. No return of the bloody urine after the first onset ever took place, nor of the general œdema. No evidence of any serous inflammation at any stage of the case ever occurred. Palpitation of the heart, caused by an anemic condition for some years, was complained of.

Nearly twenty years have elapsed since my friend was downstruck by his attack. He is now in perfect health. The urine has been perfectly healthy for at least fifteen years. He has never experienced the slightest relapse or return of the original symptoms.

It should be stated that the subject of the above case experienced a severe attack of scarlet fever at the age of sixteen years. During the interval which elapsed between this date and the time when he became the subject of Bright's disease, he passed through a severe illness from typhoid fever. He believes, from the account given to him by his mother, that slight dropsical symptoms followed his illness from the scarlet fever.

Case 2.—In 1843 and 1844, when my patient and myself were visiting Dr. Prout, the latter introduced us to Lord S—. He conducted the analysis of the urine in our presence; it was bloody, albuminous, and scanty, and the patient was dropsical. The course and stages of his case have been most remarkably similar to those of Case 1. A recent communication has assured me that his lordship has been in the enjoyment of perfect health for many years, and is so at the present time.

Case 3.—In 1844, in the practice of the late Mr. Terry, of this town, there occurred a case which came under my especial notice. A collier aged twenty-one years became dropsical, Mr. Terry and myself examined the urine; it was scanty, and had been so for eight or nine days; it was red in colour and highly albuminous. The body was swelled considerably, the breath tight, and the skin hot and feverish. Mr. Terry, who was then an old practitioner, remarked that such cases had been familiar to him for many years, and that he had always been in the habit of treating them by *bleeding*. He withdrew about eighteen ounces of blood; the patient fainted. I watched him narrowly for a month. On the day following the bleeding, the breathing had improved, the urine increased in amount, the skin became moist, and the albumen diminished in bulk. In six weeks he was at his work again. For fifteen years I have from time to time seen this man; he has never had a return of the blood or of the albumen in the urine; he has never suffered from pleurisy, and the urine is now quite healthy.

Case 4.—The late Mr. Terry, who was concerned with a fatherly interest in the case of the medical student which I have described, when summoned to visit a farmer's son, who was eighteen years of age, requested me to accompany him. This was in the autumn of 1844. We found the patient swelled with dropsy everywhere; the urine very small in bulk, like porter, highly albuminous. Mr. Terry took away blood to syncope, according to the fashion of that time amongst country practitioners. Deeply interested myself, I continued to watch this young man for some time after. He certainly was quite well in two months from our visit. I know him to be at the present time a fine, strong, hearty man. He had never had scarlet fever, and has never suffered from illness since that time.

Case 5.—In 1845, I was requested to visit a patient in company with the late Dr. Rowland, of this town. Dr. Rowland knew my medical friend, and took much interest in his case. As soon as a case occurred to him which appeared to be similar, he drew my attention to it. We went. We found a young man, about twenty years of age, in a highly dropsical state; the urine sanguineous and scanty, clottily albuminous. The patient had been in this state for some days. I related to Dr. Rowland the treatment adopted by Mr. Terry in such cases. I contrasted it with that of the great London physicians. He agreed that we should adopt an intermediate course. Our patient was purged, cupped on the back and put on low diet. He was six months in recovering, but he did recover, and has ever since been quite well. I have only recently seen him; he is perfectly healthy.

Case 6.—A young clergyman, in 1845, came to me in great distress. He was about twenty-five years of age, and had lately entered upon a curacy. He had for some time suffered from indigestion. Suddenly he found that he was swelling, and that his urine was becoming scanty and high-coloured. I found that it was charged with blood-corpuscles, that it was highly albuminous, and of high specific gravity. I treated him as Dr. Bright, Dr. Prout, and Dr. Golding Bird, had treated my friend. He was purged every morning with the compound jalap powder, and very soon he was put upon mild preparations of iron. He was at least two years in recovering, but he is now quite sound and hearty. I am not aware that he has ever experienced any illness from that time to this.

ART. 74.—*On the connexion between a local affection of the lymphatic system and Chylous Urine, with remarks on the pathology of the disease.* By Dr. H. V. CARTER, Prof. of Anatomy and Physiology, Bombay Med. College.

(*Proceed. of Royal Med. and Chir. Society*, Feb. 25, 1862.)

Dr. Carter's object in this communication is to show that chylous urine is a consequence of a direct admixture of chyle and urine—a leak from the lacteal tract into the urinary. He details three cases from which his opinions have been derived. In the first case, a Parsee youth had much enlarged inguinal glands; and, a little below them, a small, hardly perceptible pimple, from which occasionally issued a milky fluid, and sometimes so copiously, that a pint had been collected in the course of a day. Pressure above the spot caused the flow to cease; pressure upon it made the fluid spirt out to some distance, as if a subcutaneous space were being emptied. The discharge had commenced spontaneously six months previously, and had ceased and reappeared three or four times. Fourteen months later, both the discharge and the swelling of the glands continued. The fluid, when collected, resembled rich milk, was slightly alkaline, coagulated in about five minutes, and in a few hours separated into clot and serum. The microscopic characters were those of chyle. The second case was that of an adult Hindoo, who had a peculiar corrugated and tuberculated thickening of the scrotum, which was soft to the touch, and, when punctured, discharged freely a chylous fluid. The inguinal glands were very large and soft, and diminished under pressure. A milky discharge occasionally oozed from many spots of the thickened skin, to the extent of about a pint daily. This flow intermitting, the inguinal glands enlarged. The urine was occasionally chylous, and frequently coagulated. It was observed that the glands became more tumid two or three hours after a meal; but there was no regularity in the urine as to the appearance or disappearance of chyle. The third case was that of a Hindoo youth, in whom the urine was frequently chylous and sometimes bloody. It occasionally coagulated, and the clots produced a difficulty of micturition. Among other observations of this patient, the fact was noticed that ingesta of flesh or wheaten bread increased the disease. The evidence of these cases is supposed to prove that the fluids discharged from the skin and with the urine were chyle. The author reviews the proofs as arising from the physical properties, the microscopical characters, and the chemical composition of chylous urine. He alludes to a case under his care, in which the patient could at any time clear his urine of chyle by a day's fasting; and to an observation in another instance of the flow of chyle and swelling of the inguinal glands often occurring two or three hours after a meal. He refers to circumstances of the disease which were not explicable on the generally received hypotheses, but which could be satisfactorily accounted for on the supposition of a direct admixture of chyle with the urine. Differences in the qualities of

particular specimens of chylous urine, he thinks, are due to the different parts of the lacteal system which might have been ruptured in different cases.

ART. 75.—*A case of Chylous Urine.* By Dr. WATERS, Physician to the Northern Hospital, Liverpool.

CASE.—The subject of the disease was a seaman, twenty-three years of age, and a native of Bermuda. He applied for admission into the Liverpool Northern Hospital, suffering from retention of urine, in consequence of the coagulation of that fluid within the bladder. He was first placed in the surgical wards, but the nature of his ailment having been discovered, he was transferred to the author's care on October 10th, 1861. He gave the following history:—He had been a sailor from the age of twelve years; his health had always been good. A fortnight before admission, whilst on his way from New York to Liverpool, he had retention of urine, and he then found that the urine was of a white colour, and it had continued so from that time. He could assign no cause for the attack, and with the exception of feeling rather weak, he felt well. No evidence of visceral disease could be discovered. The urine was abundant and of the following character:—When first passed it was white, with a pink tinge, resembling milk, and having a somewhat similar odour. It was quite free from urinous smell. Soon after being passed it coagulated. The coagulum disappeared sooner or later. After standing, a deposit of blood and muco-pus took place, and a layer of cream-like fluid generally formed on the surface. The urine was slightly acid or neutral when passed. Heat and nitric acid gave a copious precipitate. No sugar could be detected. Ether caused a deposit on the surface of oily particles, leaving the mass below clear. The microscope showed the presence of a large number of fat-globules, many of them very minute. No other abnormal matters could be detected. The following is an analysis of the urine by Dr. Baker Edwards:

Specific gravity of specimen, 1012.		
Water		967·3
Solid matter, viz.:		
Fat	9·9	
Urea	6·0	
Albumen, with traces of uric acid . .	6·0	
Vesical mucus	4·5	
Animal matter, with a trace of ammoniacal salts	4·1	
Fixed alkaline salts	2·0	
Earthy salts	0·2	
	——	32·7
		1000·0

A comparison of the analysis with that of healthy urine will show that the following substances were in excess, or abnormally present—viz., water, fat, albumen, and mucus; and that the following were deficient—Urea, extractive matters, and the alkaline and earthy salts. During the treatment the urine passed by the patient at each evacuation of the bladder was kept separate, and at one o'clock daily the specimens passed in the

previous twenty-four hours were examined, and the specific gravity and general appearance of each noted.

Progress of the Case.—During the first week of treatment the urine continued milky, bloody, clotted, and highly albuminous. The specific gravity varied from 1010 to 1017. The urine was passed on an average, twelve times daily; the average daily quantity was three pints five ounces. During the second week the urine continued milky, except on one or two occasions, when it was whey-like. The quantity of blood was diminishing; and some specimens, at the end of the week, were free from blood. The specific gravity varied from 1006 to 1016. The urine was passed, on an average, twelve times daily; the average daily quantity was four pints four ounces and a-half. In the third week the urine became less milky; some specimens were merely turbid, and a few opalescent. During the last two days of the week the blood disappeared. The quantity of fibrin was diminishing, and the urine was decidedly acid; specific gravity, 1005 to 1020; average number of times the urine was passed, twelve; average daily quantity, four pints eight ounces. During the fourth week the urine was at times quite milky, at others turbid and opalescent; there was a marked diminution in the quantity of fat, as well of fibrin and albumen. At the commencement of the week the urine ceased to coagulate after being passed, and, except on one occasion, it never coagulated again. Specific gravity, 1007 to 1025; urine passed on an average six times daily; average daily quantity, two pints seven ounces. During the fifth week the urine became quite natural, and remained so up to the patient's discharge. The first perfectly healthy urine was passed at half-past six p.m. of November 11th. Four specimens passed subsequently were slightly "chylous;" but from midday of November 10th, every specimen was healthy. Specific gravity 1010 to 1025; urine passed five or six times daily; average daily quantity, two pints one ounce. During the sixth week the urine continued healthy; it was passed six times daily; specific gravity 1015 to 1022. Only a general record was kept after this date. The patient was discharged from the hospital on December 17th, the urine having remained perfectly healthy for five weeks.

Treatment.—For the first week the patient took tonics, quinine and iron, with wine; no improvement followed. Treatment by gallic acid was commenced on October 18th, with a grain of opium every night. The gallic acid was at first given in doses of ten grains three times a day. The quantity was gradually increased until November 1st, when two drachms were taken daily. This dose was continued to the 9th, when the quantity was increased to two drachms and fifteen grains daily, and continued till the 16th, at which time the urine was healthy. The gallic acid was then gradually diminished from day to day, until on the 28th it was omitted altogether. From October 26th to November 14th the patient had a vapour-bath every night. He took a grain of opium every night, and six ounces of sherry wine daily, from the 17th to the 31st October, when both were omitted. The diet was throughout good, consisting of meat, bread-and-butter, potatoes, two and four eggs daily, and arrowroot. After the wine was stopped he drank nothing but tea and toast-water. The patient weighed on October 20th, ten days after admission, 8st. 6lb. From this date he gained flesh; on November 14th, he weighed 9st. 10lb.; on December 11th, a few days before his discharge, 10st. 6lb. The total quantity of gallic acid taken by the patient was 7oz. 48 grains.

Pathology.—The author's opinion that the disease is one of which the main pathological feature is a relaxed condition of the capillaries of the kid-

neys; that in consequence of this condition, the albumen, the fibrin, the fat, and the blood-corpuscles are filtered from the blood-vessels, and make their appearance in the urine. He thinks that the results which followed the administration of the powerful astringent he used bear out his views. The results were such as might be anticipated from the action of an astringent on the relaxed capillaries. From the time the patient was under observation, it was impossible to say that a permanent cure had been effected. The case, however, showed the value of the remedy that was used, and should encourage us to make trial of it in all similar cases. The author also is of opinion that the persistent employment of the vapour-bath was highly beneficial, and he recommends its adoption in all future instances of the affection.

ART. 76.—*On a simple mode of testing for Lead in the Urine.* By Dr. REEVES.

(*Australian Medical Record*, Dec. 14, 1861,)

"We have often regretted the want of some simple means to detect the existence of lead in the urine; the evaporation of a large quantity, and then adding acetic acid, filtering, and then passing sulphuretted hydrogen gas into it, taking up a considerable amount of time. We have used the following simple plan for detecting it in several cases, and found it answer extremely well:—After giving the patient four or five grains of iodide of potassium three times a day, we give them a piece of sulphuret of potassium, tied up tightly in a piece of thick white rag, and request them to place it in the urine every time they pass it for five minutes for two days. If lead exists in the body, the iodide of potassium combines with it, and renders it, by converting it into iodide of lead, soluble, causing it to pass off through the kidneys. The iodide of lead in the urine is readily decomposed when it comes in contact with the sulphuret of potassium, and insoluble sulphuret of lead is formed, which remains in the rag.

"In the absence of the blue line on the gums, or when it is feebly marked, and the symptoms present can scarcely be said to belong to lead poisoning, we have found it of the greatest value in determining the true cause of the disease. In obscure pains, of a rheumatic or neuralgic character, which have resisted every kind of treatment, the detection of lead by these means will enable the practitioner, by continuing the iodide of potassium and strychnine, to cure the patient. The following cases will illustrate the value of this plan.

"In the first the patient, a male, aged 35, a saddler by trade, two and a half years in the colony, came under our notice on the 14th of October, suffering from pain in the right arm, of a neuralgic character, of two years' duration. It is worse in wet weather and in the night, in the morning it passes off after he commences work. He refers the pain to the extensor muscles of the forearm, whence it shoots to the arm above the elbow, and thence up to the spine. If he grasps any object in a straight manner he feels pain in the wrist, and cannot do so firmly, but if he gets it under his hand, the grasp is firm enough, and he feels no pain in the wrist. There is no dropping of the hand, there is an almost imperceptible blue line on the gums; his face is of a rather sallow colour, and he is incapable of performing a hard day's

work. The pain he considers to have been caused by a blow he received on the arm on his voyage out, although it did not set in until he had been here some months. He has had much treatment, without benefit. Feeling assured that the symptoms depended on the effects of lead, iodide of potassium with strichnine were given him internally, and a piece of sulphuret of lead, tied up tightly in a piece of white rag, to place in his urine. On the 19th, when the bundle was brought, it was slightly discoloured externally, but internally there was a large quantity of sulphuret of lead.

"The pain was much less severe, and his grasp rather stronger. He did not come under my notice again until the 12th of November, and had not taken any medicine for three weeks; he has had no pain at night, and but very slight pain in the morning; it is referred to the forearm and shoulder, but does not go to the spine.

"In another case which has fallen under our notice during the last eight days, the patient, a female, 35 years of age, has been suffering for eight months from a neuralgic affection of the nerves of the left arm. It is very severe at night, and is worse in wet weather, and is accompanied by a scarcely perceptible weakness in the hand. Her face is sallow, her gums pale, and they have a scarcely perceptible bluish tinge. Suspecting that the pains were the result of lead, we gave her four grains of iodide of potassium, and one twelfth of a grain of strichnine three times a day, and a piece of sulphuret of potassium, tied up in a piece of rag, to place in the urine she passed. On the fourth day the rag was found to contain sulphuret of lead, which, when dried, weighed five grains. The pain had diminished very considerably in severity."

Art. 77.—*On the influence of Mercury upon Urine.*
By Dr. Edward Harvey.

(*Medico-Chir. Review*, April, 1862.)

From certain careful experiments upon puppies, it appears that as long as the animal retains its health, mercury exercises no influence upon the amount of urine or urea, the quantity being sometimes a little more, sometimes a little less than it was before the mercury, but that the phosphates and entire ash are *always diminished in a remarkable degree.* In other words, the effect of mercury upon the urine is to diminish the secretion of the salts. Dr. Harvey proposes to make a series of blood-analyses before and after mercury has been taken, in order to ascertain, if possible, upon what this diminution of the secretion of the salts depends.

(f) Concerning the Cutaneous System.

Art. 78.—*On calamine as a means of preventing pitting in Smallpox.*
By Dr. John Gason, Rome.

(*The Medical Circular*, Dec. 18, 1861.)

Dr. Gason describes a case in which he employed calamine, or impure carbonate of zinc, for this purpose, with satisfactory results.

Case.—Some years since, I was sent for to see a lad, æt. 14 years, who was suffering from severe feverish symptoms; but a short time elapsed before unmistakeable symptoms left no doubt of its being smallpox. Suffice it to say, that it was accompanied by high fever, and a very abundant and confluent eruption completely covering the face and hands, but comparatively slightly scattered over the body, upper and lower extremities, with the exception, as I said before, of the hands. He complained bitterly of the heat and tightness of the skin, particularly that of the face. Being very anxious as far as I could to prevent pitting of the face, and relieve at the same time the tightness of the skin, which he complained so much of, I bethought me of the calamine, which appeared to me would answer this double end, from its desiccating and astringent nature. I at once dusted the whole surface of the face with that substance reduced to a very fine powder. The lad expressed to me on my second visit to him, after the lapse of a few hours, the great relief which he experienced from this treatment. On each following morning for some days I had the dusting with the same powder repeated, until all outlines of the face were lost in the mask which the powder formed; which, finally, could not have been less than one line in thickness all over the face. The powder appeared to have absorbed the matter of the pustules, and with it formed a thick plaster, covering the face. The internal treatment was of the mildest nature possible; and as he had but very little secondary fever, he soon became convalescent. The treatment which I used with his hands was puncturing the most prominent pustules. The appearance of the boy was most hideous in his earthen mask. The face, nose, and chin, relieved by his red gums and peering eyes, which alone remained uncovered, presented an appearance which his father, an old sailor (who had not seen him for several days, and, though warned by me of what he was to expect), almost fainted at beholding, and did not afterwards ask to revisit him. At the usual period the mask fell off, and left the face of this boy completely smooth, and free from the slightest pit, except one on the nose, which he rubbed early in the disease before the zinc was put on. The red spotting of the face showed the intensity and abundance of the eruption, and in six months afterwards even this had completely disappeared, and no sign of the disease was in the least degree apparent beyond the one solitary mark which I mentioned.

Art. 79.—*Abortive Treatment of Zona by Collodion.*
By Dr. Fenger, of Copenhagen.

(*Rev. de Thér. Méd. Chir.*, Oct. 15, 1861; and *British Medical Journal*, Dec. 21, 1861.)

Dr. Fenger has given in the 'Bibliothek for Lœger,' the following results of fifty cases of zona, treated by the application of collodion a few hours after the appearance of the eruption:—1. The cutaneous heat and redness were diminished. The pain completely or very nearly disappeared within twenty-four hours in twenty-seven cases; in twelve cases, it remained till the second or fourth day. The vesicles were nearly obliterated in the course of the first day. 2. Fever was noticed in forty-two cases, in eight of which it was very intense. In twenty-one cases it had disappeared the day following the application of the collodion; in four, it continued three or four days; and in one only was it obstinate in duration. 3. The appearance of fresh groups

of vesicles was almost universally prevented. 4. Neuralgic symptoms, if they did not yield altogether and immediately, were more alleviated by the collodion than by any other remedy. 5. The method of treatment was never attended with danger. 6. The ulcerations and indications of gangrene, which are sometimes met with in cachetic persons attacked with zona, were not noticed. Excoriations giving rise to serous exudations were sometimes formed under the collodion, but they never passed on to suppuration, and healed readily under the application of simple cerate. The collodion was sometimes applied in the pure state; most frequently it was rendered elastic by being mixed with castor oil; and sometimes an alcoholic solution of acetate of lead was added.

ART. 80.—*On Herpes, especially with reference to its connexion with affections of the Nervous System.* By Dr. VON BARENSPRUNG.

(*Annalen des Charité Krankenhausen zur Berlin*, Bd. ix, Ht. 2, 1861; and *Medico-Chir. Rev.*, Jan., 1862.)

In considering the topography of the disease, bearing in mind its dependence upon derangements of internal organs, the author shows that the eruption follows the course of various nerves, and commences the description of each variety (which we shall not dwell upon) by giving what he terms the type of the variety in question. Thus, the zoster facialis, limited to one side of the face, corresponds to the cutaneous and mucous twigs of the trigeminal nerve; the labial form being restricted to the labial branch of this nerve. The occipito-collaris subdivision corresponds to the peripheric distribution of the third cervical nerve; the cervico-subclavicularis subdivision to that of the fourth cervical nerve; the cervico-brachialis to that of the cervical and dorsal nerves, which are united to form the brachial plexus; the dorso-pectoralis to that of the third, fourth, fifth, sixth, and seventh thoracic nerves; the dorso-lumbar to that of the eighth, ninth, tenth, eleventh, and twelfth thoracic nerves; the lumbo-inguinal form to that of the first lumbar nerve and the twelfth intercostal, which anastamoses with it; the lumbo-femoral form with that of the second, third and fourth lumbar nerves, involving specially the anterior and external cutaneous, the genito-crural, obturator, and crural nerves; the sacro-ischiadic form with that of the anterior branches of the sacral nerves, which unite with the two last lumbar nerves and the sympathetic, forming the sacral plexuses from which the pudendal, great posterior, cutaneous, and ischiadic nerves (those herein implicated) proceed.

In discussing the symptoms, separate consideration is made of the accompanying fever, the inflammation of the skin, the pain, neuralgia, and other indications of nerve-irritation, the gastric symptoms, and the condition of the urine and of the blood; reference being made to the observations of Rayer on the presence of fat in the blood in these cases; and of Keller, who found* that in this disease there was great increase of the chlorides, especially chloride of sodium and phosphoric acid salts, with diminution of the sulphates and urates; also much of

* 'Archiv. f. Physiol. u. Path. Chemie,' 1850.

the ammoniacal compounds, and fat. The author, however, states that he has been unable to find any remarkable changes in the constitution of the urine in his cases.

The ætiology of the disease is considered at some length, and it is determined that in the skin-inflammation, possessing, as it does, a typical form and course, and limited to the peripheric distribution of certain cerebral and spinal nerves or their branches, the source of inflammation is not from without, nor in the blood, but that it operates through the nerves, and in fact depends upon their abnormal irritation. It becomes necessary to inquire of what nature it may be, and at what part does this irritation occur. It cannot have a central origin, for the zoster always follows the track of one or two nerves, and is almost always confined to one side of the body. It cannot spring from cerebral sources, for then it would be frequently extended to the whole of one half of the body; nor from the spinal marrow, for then would it be as a rule symmetrical. Now in all completely developed cases the anterior and posterior roots are contemporaneously affected, consequently the excitement of the spinal nerves must occur before their exit from the intervertebral foramina, and we must now locate the point of irritation in the roots of the spinal nerves. Still the question remains, which is the root affected? And it is resolved that it must be the posterior one, because in this disease all motor influences are unaffected, and inasmuch as the affection is so frequently associated with exalted sensibility. Allusion is then made to the fact, that sensitive nerve-fibres often not only convey their specific activity, but also a nutritive one; and illustrations are drawn from the coexistence of redness of the skin in neuralgia, and injection of the eyes, with increased flow of tears, saliva, &c., in neuralgia of the trigeminal nerve; and reference made at length to the established occurrence of sympathetic fibres in cerebro-spinal nerves, owing to their communication with ganglia, by which these ganglia preside, as it were, over the trophic conditions of special organs. Where, then, it is asked, are these fibres which proceed to the surface of the body, whose morbid excitement produces the remarkable phenomenon of herpetic eruptions. The place has already been pointed out — viz., the posterior roots of the spinal nerves; and it is to the spinal ganglia which are connected with these roots that we must look for an explanation of the phenomenon under consideration. The sensitive nerve-fibres are described by Kölliker and others as passing through spinal ganglia without being intimately connected with them; whilst the ganglion-fibres arising in the ganglion-masses do not extend towards the spinal cord, but take a peripheric course along the sensitive fibres. Hence arises the neuralgia so common in zoster by a propagation of irritation from the ganglion to the corresponding posterior roots, and thus the latter may propagate their irritated condition through the spinal cord to neighbouring and symmetric nerve-regions; whilst the trophic irritation always remains on one side, because the ganglion sends no fibres to the spinal cord or receives any from it. One or two cases are quoted bearing on the question, and one is specially worthy of observation, in which intense pain at the posterior part of the whole leg, and the formation of numerous groups of vesicles with reddish-yellow contents, of various

sizes, was supposed to be owing to an œdematous and hyperæmic states of the ischiatic nerve as found after death connected with psoas abscess. Cases are also quoted showing that also a peripheric irritation of a nerve containing ganglion-fibres may cause a limited eruption of herpetic vesicles.

Art. 81.—*On Ringworm and Vegetable Parasites.*

By Dr. Hillier, Assistant-Physician to the Hospital for Sick Children.

(*British Med. Journal*, Nov. 23 and 30, 1862.)

The pathological conclusions at which Dr. Hillier arrives after a careful and masterly examination of the subject are these:

Tinea tonsurans is a disease of the scalp, dependent on the growth of a peculiar fungus—trichophyton tonsurans.

Its growth is favoured by a weakly constitution and want of cleanliness; but these are not essential to its development. It is decidedly contagious; its growth is favoured by some atmospheric conditions more than others.

The fungus of tinea tonsurans is often found in the scales of herpes circinatus; but herpes circinatus may exist without it. Some cases of herpes circinatus appear to depend on the contagion of tinea tonsurans.

Pityriasis versicolor is another parasitic affection dependent on a fungus probably distinct from the trichophyton; but a sort of pityriasis may be caused by trichophyton, and other forms of it are non-parasitic.

In sycosis there is also a parasite; but whether it be the same as in tinea, is not established.

The fungi of tinea tonsurans and tinea favosa are quite distinct.

Two different fungi may be found on the same subject, one of them being accidental in its occurrence.

Many skin diseases not essentially parasitic may be occasionally the seats of a few sporules of fungi. Alopecia areata is probably one of this class of diseases.

With respect to diagnosis and treatment Dr. Hillier says:

"The *diagnosis* is not difficult; at any rate, in the second stage. The roundish patches with clipped hair, roughened with branny scales and prominent hair-follicles, are phenomena not found in any other complaint. The smoothness of the patches distinguishes alopecia areata and the faintness of the hair-follicles; if any hairs exist on the patch, they are pale, and of the most downy description, not thickened and dark in colour.

"The thick yellow crust of favus is characteristic, as is usually the peculiar smell. In the very onset of tinea tonsurans, you may not be prepared for so serious a disease, if you are not looking for it; erythematous rings, or raised spots, with branny scales, do not occur on the scalp from any other cause, so far as I know.

"If the scalp have been much irritated, pus may be form
scabs cover the diseased patches; but there will generally
portions which have retained the characteristic appearances of

tonsurans. When pustules do form, so far as I have seen them, they are but small, and not followed by thick scabs.

"It is not very often that vesicles can be discovered in cases of tinea, although it was called herpes tonsurans by Cazenave. The microscope comes in to make the diagnosis absolute, by exhibiting the peculiar fungus and the diseased hairs.

"*Treatment.*—The main indication is to get rid of the parasite, just as in scabies to destroy the acarus. A variety of substances may be used, all of which have this effect. I have tried a large number, such as corrosive sublimate, either in ointment or in solution, solution of sulphurous acid, applied on lint under oiled silk, nitrate of silver either solid or in a strong solution, ointment of acetate of copper, blistering applications, and preparations of iodide of sulphur; or a mixture of one ounce of sulphur ointment, to two scruples of ammonio-chloride of mercury, as recommended by Dr. Jenner. I find none which answer so satisfactorily as the compound sulphur ointment of the Hospital for Skin Diseases:

℞ Sulph. Sublim., ℔ ss; Hydrarg. Ammon.-chloridi, Hydrarg. Sulph. cum Sulph., āā ʒss. Leviga simul, dein adde Olivæ Olei, ʒiv; Adipis recentis, ʒxvj; Creasotonis, ♏xx. Misce.

"It must not be expected that a cure will be effected in a week or two. If the disease have made much progress it will not be cured under several months. Epilation is recommended by M. Bazin. This is stated by Dr. Jenner to be impracticable; and I have found it to be so, except at the very onset, before the hairs are much attacked, and have become brittle. You may often fancy you have pulled out a hair by the root, when, on closer examination, you will find that you have only broken it off just as it emerged from the follicle. Shaving the head is generally desirable. The internal administration of cod-liver oil and steel is of course indicated in scrofulous and tuberculous children.

"Tinea tonsurans is not a very common disease. Out of 7000 cases treated by me at the Hospital for Sick Children, from September 1858 to September 1861, there were only twenty-four cases of tinea tonsurans, of which three are mentioned as having been also affected with herpes circinatus; and five cases of the latter disease uncombined with tinea.

"It is probable that there were more cases in which both the scalp and the body were affected with ringworm; because frequently, where two affections coexist, the major only is indicated in the hospital books, especially when they are so nearly allied as in the present case. The numbers just given do not fairly represent the relative frequency of herpes circinatus, because this is an affection which parents themselves frequently treat by the application of ink, or leave without treatment, as it frequently gets well spontaneously.

"The best treatment for herpes circinatus alone is the local use of astringents, such as a strong solution of sulphate of iron, or a drachm of nitrate of silver to the ounce of water."

ART. 82.—*Identity of Pityriasis Versicolor and Tinea Tonsurans.* By Mr. JONATHAN HUTCHINSON, Assistant Surgeon to the London Hospital, &c.

(*Proceedings of the Pathological Society of London; Med. Times and Gaz.*, Dec. 28, 1851.

Some years ago Mr. Hutchinson brought before the Pathological Society a series of facts in proof of the possibility of contagion between these two affections, and one case in which contagion had been effected by artificial transference. The present case is an additional proof to the same effect—a partial proof, for certain drawings and microscopical preparations are necessary to make it complete.

CASE.—A child of two years old had been under treatment for well-characterised tinea tonsurans on the scalp. The hairs and epidermis showed abundance of the peculiar fungus. The disease had previously affected three of the child's elder brothers and sisters. At one visit, the girl who nursed the child, a healthy, fair-skinned person of eighteen, mentioned that she had some spots on her bosom. On inspecting these, Mr. Hutchinson found them to be typical patches of pityriasis versicolor. The child had been accustomed to sleep with his nurse, and had often rested his head on her bosom.

ART. 83.—*Scabies successfully treated by Coal-tar Naphtha.* By Mr. SAMUEL SPRATLEY, Surgeon to the *Akbar* Reformatory Frigate.

(*British Med. Journal*, Nov. 2, 1861.)

"In the number of the 'British Medical Journal' for September 28th, there appeared a letter from Mr. Godfrey of Malvern, strongly recommending the application of benzine to the surface of the body in the case of itch. We have had several intractable cases which have slowly yielded to the inunction of sulphur ointment. The frequent occurrence of fresh cases in those boys just discharged from the gaols to the *Akbar* to undergo their period of committal, together with difficulties of keeping the infected boys from the rest, and the length of time required in the treatment by sulphur before the cure can be pronounced complete, determined me on the first opportunity to make a trial of the remedy above named.

"On Monday, September 30th, a very bad case was discovered in a boy, aged 15. I sent for some benzine, but, unable to procure it, made use of a much cheaper remedy, viz., coal-tar naphtha, which is, like benzine, a carbide of hydrogen, and nearly identical in chemical composition. The patient was made to sponge himself thoroughly with it, and was kept apart from the rest of the boys. The next morning the itching had entirely ceased, and the eruption appeared dying away; his clothes were well boiled, and at the end of three days he was allowed to return to his duty in the ship, and from that time to the present there has not been the slightest symptom of return.

"It is hardly fair to judge from the success of one case, but I trust

that the naphtha will have a fair trial; and should it prove a speedy and effectual cure for this disease, it will prove a great boon to the profession at large."

ART. 84.—*A form of Skin Disease occurring in manufacturies of Kerosene oil, and believed to be undescribed.* By Dr. HARRISON ALLEN.

(*American Quart. Journ. of Med. Science*, Jan., 1862.)

In the early part of the summer of 1861, a person who had been a workman in a Kentucky kerosene oil manufactory came into the ward for disease of the skin of the Philadelphia Hospital, having a pustular form of skin disease of a peculiar nature. The patient had had the affection six months, and attributed it to some poisonous agent employed in the manufacture of kerosene oil, as it appears that in the works in which he was employed some other of his fellow-labourers were affected in a similar manner.

The disease first presented itself upon the hands and forearms; but at the time of his admittance it had extended to the chest, back, and inner surfaces of the thighs and legs, the face and scalp being entirely free. It commenced by the appearance of a number of small papules of a reddish colour, which in the course of one or two days became marked phlyzacious pustules. Each one of them bore upon its summit a black spot closely resembling the discoloured surface of sebaceous secretion. The pustule, in about the same time as was required for its maturation, desquamated and left behind a small deep pock somewhat resembling that which succeeds the smallpox pustule, but much less significant. The time ensuing from the appearance of the papule to the formation of the pock varied, but most generally five days were sufficient for the completion. In a comparatively few instances the process of maturation appeared checked, and the papule would change to the pock without any pus having made its appearance. Occasionally one of the pustules, after having desquamated, would again go through the same conditions before the skin would resume its natural colour and sensation.

The eruption was most plentiful upon the anterior and posterior parts of the chest, where the papules, pustules, black spots, and minute depressions were all intermingled.

The pain was very trifling. A sensation of soreness in the pustules was complained of which, became worse at night when the patient was warm in bed. There were no constitutional symptoms whatever. The man was stout, strong, and, with the exception of the cutaneous affection, in every respect healthy.

His treatment consisted of a soda bath every morning, and five grains of iodide of potassium three times a day.

This was continued with but little advantage during the latter part of June and the whole of July. On the first of September the iodide of potassium was stopped. He now commenced with five drops of Liq. Potassæ Arsenitis three times daily, together with the soda baths and the local application of Ung. Hydrarg. Nitratis. Under this treatment he gradually improved. The papules became fewer and

smaller until there existed but a few discoloured spots upon the back and chest, the other parts being entirely free.

The conclusion which one would naturally arrive at after hearing the history and seeing the appearance of this patient would be, either that there was some poisonous agent contained in the materials from which the coal oil is extracted, or that in the process of manufacture certain chemicals deleterious to health were employed. But, unfortunately, there is no principle or acid found in the coal upon which any suspicion can rest. Those manufacturers with whom the author has conversed, refuse to accuse any set of ingredients of producing pernicious effects; but they, on the contrary, maintain that they are quite demulcent in their nature, the oil especially being used by the workmen as a local application to abrasions and burns.

On the other hand, chemists are unable to affirm that any articles used in obtaining the oil are capable of being exciting causes to disease. The substances are generally familiar acids and alkalies, and it is impossible that their accidental contact with the skin should produce a peculiar eruption which could last half a year. But it must be acknowledged that on this subject there is a certain amount of unavoidable ignorance. Each manufacturer may, and in many instances has a secret process for obtaining his oil; and, of course, if there be any morbid symptoms arising from the injurious employment of these agents, the nature and origin of such effects must alike remain unknown.

It would then seem that we cannot arrive at a definite and satisfactory conclusion; and we are led to suspect that the patient might have been induced to accuse his trade for causing that which would be the natural results of depraved habits. But the man has an untainted constitution and is temperate. He has never had any form of skin disease previous to this attack; and the fact that it came upon his hands first, and that he suffered in common with his fellow workmen similarly engaged, go to prove the external source of the disease.

The pustules with their blackened summits resembled acne; but the face was entirely free, while the breast, back, and lower limbs were thickly strewn with them. Again, the eruption spread slowly from the hands upwards over the trunk; and it would seem that there was some deep-seated poison to produce reiterated effect; for, in some instances, as mentioned above, a simple pustule would several times rematurate before resolution would occur. So that these facts, taken together, show that the symptoms of this form of eruption are quite peculiar; and although it is as yet somewhat obscure, and the present advantages of investigation limited, it nevertheless presents an interest to the practitioner from the fact that it seems to have been in some manner intimately connected with the manufacture of an article which is now exciting general attention.

PART II.—SURGERY.

SECT. I.—GENERAL QUESTIONS IN SURGERY.

(A) CONCERNING INFLAMMATION.

ART. 85.—*On the treatment of Pyæmia and Hospital Gangrene.* By Dr. JÜNGKEN.

(*Medical Times and Gazette*, Nov. 2, 1861.)

"According to Professor Jüngken," we quote from a letter of the foreign correspondent of the 'Medical Times and Gazette,' "there is no specific remedy for this obstinate and dangerous affection, which could, exclusive of all others, effect a complete cure. Not even the actual cautery is able to do this, although it is the most powerful of all remedies offered to us for combating this affection; but even if we cauterise a gangrenous wound as deeply as possible, and the patient is still left in a contaminated atmosphere, the ulcer will again present a gangrenous aspect as soon as the eschara has come away."

"The air-bath is just as important in pyæmia as it is in hospital gangrene, especially if it is possible to place the patient under foliated trees, the exhalations of which are known to have a beneficial effect. In many desperate cases of pyæmia and nosocomial gangrene, where every means had been employed in vain, and the patients seemed past hope, an immediate change for the better was perceived after Professor Jüngken had ordered them to be taken out of the Surgical wards of the Charité Hospital, into the gardens adjoining this institution, where they were placed on a simple couch, covered with a blanket, and left in the open air for the rest of the day. Other remedies which had until then been employed in vain now took effect, and the professor thus succeeded in saving wounded persons who must otherwise have certainly perished.

"Professor Jüngken found a striking confirmation of these views during the revolution in Dresden, when a sanguinary struggle took place between the insurgents and the soldiers. Many of those wounded on this occasion were brought into the palace belonging to

Count Marcolini, in which the saloons are furnished with very large windows, reaching to the bottom, and which looked upon a beautiful garden filled with splendid old lime-trees. Whenever the weather permitted, those most dangerously wounded were carried on their beds into the garden, and spent the whole day under the trees. The results were strikingly favorable. It is, after all, better that the patient should shiver a little in a cold but pure air, than that he should die in a warm but poisoned atmosphere. * * * *

"There is only one remedy for this terrible disease, which never fails the surgeon, provided it is properly used, and that the other circumstances, such as light, air, &c., are favorable: this is the actual cautery, which has of late been unjustifiably neglected, but is believed by Professor Jüngken to be the only certain and reliable means for destroying the peculiar and dangerous contagion of hospital gangrene. To neglect the actual cautery under such circumstances, is not only to do harm to the infected patients, but also to those not yet attacked, as the contagion will then no doubt spread further, and become more dangerous. The surgeon ought to be the readier to employ the actual cautery, as the patient may be put under the influence of chloroform, and thus be spared much suffering during the operation. To render this effective, the iron must be brought to white incandescence, in order that the most intense heat may be applied to the gangrenous surface; otherwise the operation is useless. It must also be applied at an early period, if possible at the commencement of the epidemic, in order to destroy the evil in the germ. If, however, the gangrene has become strongly developed, the whole surface of the wound must, previous to the cauterization, be laid bare, sinuosities and canals must be carefully divided, larger mortified parts must be removed by means of the scissors or the knife, the surface must be cleaned of all detritus, and dried by lint or sponges, so that the cautery may act upon a clean and dry surface. It must be applied especially to the edges of the ulcer, and beyond the diseased parts, in order to produce plastic reaction. Afterwards the patient must not remain in the room in which he was before; but he ought to be transferred either into the open air or in a single room, where doors and windows are open by night and day; and the bed ought to stand as close as possible to the window, even during the night, and whether the season be rough or not. The elimination of the eschara ought to be left to nature, and should not be promoted by warm fomentations or cataplasms, which relax the parts and thus favour relapses. The eschara will then come off a little later, but we have, on the other hand, the advantage of a stronger reaction, a better suppuration and formation of granulations. Gentle irritants should afterwards be applied to the surface of the ulcer.

"The local applications ought to be accompanied with a suitable dietetic and pharmaceutical treatment. The strength of the patient must be kept up, and no mercury be given, the bowels being kept open by mild aperients. By strictly adhering to these rules, Professor Jüngken has for a number of years succeeded in keeping the surgical wards of the Charité Hospital, which were formerly a hotbed of hospital gangrene, free from this terrible scourge."

(B) CONCERNING WOUNDS AND ULCERS.

ART. 86.—*On the treatment of Burns.* By Mr. SKEY, Surgeon to St. Bartholomew's Hospital, &c.

(*Lancet*, Oct. 5, 1861.)

Mr. Skey advocates the stimulating treatment of burns first suggested by Dr. Kentish. "In July last," he states, "five men were admitted into St. Bartholomew's Hospital, with severe burns on the face, head, chest, and arms. One died immediately after his arrival. My house-surgeon, Mr. Richard Smith, was at the time ill, and the immediate charge of these cases devolved on a colleague, who applied the oil and lime-water to the arms and hands of each of the surviving men. At that moment Mr. Smith arrived, and completed the dressing by the application of a solution of nitrate of silver (ten or twelve grains to the ounce of water) to the face, neck, &c. I did not see these men till the following morning, when all four complained of severe burning pain in the arms and hands, but stated they were free from pain in the other affected parts. The stimulating solution above mentioned was applied to the upper extremities, and the relief at the expiration of about a quarter of an hour was complete. In two of the cases some pain returned on the third day, and relief was obtained by the same means. My directions are simply these: In the case of infants or young children, wash the affected surface, if not very extensive, with a solution of nitrate of silver, in strength six or eight grains to the ounce, and immediately cover up the part with a thick mass of cotton wool; in the case of an adult, from twelve to fifteen grains, unless the surface requiring the application be very large. Should pain return, the solution may be advantageously resorted to at any early stage of the treatment."

ART. 87.—*On the treatment of Scalds and Burns.* By Dr. J. Y. MYRTLE.

(*Edinburgh Medical Journal*, April, 1862.)

Dr. Myrtle recommends dressings with sulphur ointment in scalds and burns of a minor character. In severer cases, and in all cases where ulceration is present, he uses leek ointment, suggested by Dr. Stark, and formed by simmering leeks in hogs' lard, one leek to a piece of lard about the size of a slice of butter. He speaks very confidently of the good effects of this mode of treatment.

ART. 88.—*On the treatment of the Contractions resulting from Burns.* By M. ROSER.

(*Archiv der Heilkunde*, No. 1, 1862.)

The plan adopted by M. Roser is that to which attention was first drawn by Mr. Tamplin. The part is surrounded by small strips of plaster, and counter-pressure is made at the contracted flexures by

means of small pads of cotton wool. The results attending the treatment of fingers contracted from the cause under consideration is even more satisfactory than that which Mr. Tamplin represented it to be.

(c) CONCERNING DISEASES OF BONES AND JOINTS.

ART. 89.—*Further observations on Anchylosis, with an account of a new operation for the restoration of motion, when articular inflammation has resulted in Synostosis.* By Mr. BRODHURST, Assistant-Surgeon to the Royal Orthopædic Hospital, &c.

(*Proceed. of Royal Med. and Chir. Society*, March 11, 1862.)

This paper is a continuation of papers which have been noticed on former occasions (Vol. XXV, p. 146, and Vol. XXVIII, p. 166). Bony anchylosis, the author remarks, is rare, especially in young persons. When it occasions great inconvenience, as when it occurs at the hip, or when the limb is fixed at an inconvenient angle, motion may be restored by cutting through the bone, and making a false joint; an operation which should be done as near to the seat of the normal articulation as possible, so as to allow of the more free action of the muscles. The details of a case of bony anchylosis of the hip are given, where the neck of the thigh-bone was divided, and a false joint established. This operation has on no former occasion been performed. The case was seen with Dr. Brown, of Brighton.

CASE 1.—A young lady, æt. 25, began to suffer from hip-joint disease when she was six years old. Abscesses formed, and at length bony anchylosis ensued, the limb being fixed in such a position that the foot remained five inches away from the ground when the patient stood erect. The sole of her boot was four and a half inches in thickness. The patient was only able to move about on crutches, and in consequence of her great discomfort, and of her desire to obtain some motion at the hip, it was determined to divide the neck of the thigh-bone, to remove the necrosed portions of bone and to form a false joint. The operation was commenced by making an incision two and a half inches in length, which commenced one inch and a half above the great trochanter, and which was carried downwards and outwards to the outer side of the trochanter itself. The upper portion of the incision was extended upwards and inwards for two inches and a half, until it fell into a suppurating sinus immediately below Poupart's ligament. The neck of the femur was sawn through, and the sharp edges of the bone were removed, as well as the necrosed bone from the acetabulum. The upper half of the wound healed by the first intention, and in three weeks the whole had healed. At this time the patient had some power of flexion and extension. Passive motion was employed, both to prevent osseous union and to give shape to the new head. In six weeks an instrument was adapted to the limb, with which the foot could be firmly planted on the ground. The soles of the right and the left boot were at this time of the same thickness. Three months after the operation she could bear considerable weight upon the foot; she could sit comfortably in a chair, and could walk, using the joint, but still supported by crutches.

The details of the following case, which, as well as the former, were seen with Dr. Brown, of Brighton, are also given.

Case 2.—September, 1860, a midshipman, falling from the main-rigging on to the deck of the vessel, dislocated the femur on to the dorsum ilii. Various attempts were made to reduce the bone, which were unsuccessful, until the fourth attempt was made, three months after the accident. The head of the bone was then returned to the cotyloid cavity, and the limb was kept motionless so long that it became anchylosed, in which condition the patient was seen by the author, thirteen months having elapsed since the accident occurred, and ten months since the restoration of the head of the bone. The thigh at the hip was immoveable; the heel was two inches and a half from the ground; the foot was everted; the limb was wasted. The patient could only move with sticks or other support. It was determined to rupture the adhesions and to endeavour to regain motion. Under the influence of chloroform they yielded readily. There was no pain after the operation, so that it was unnecessary to administer an opiate. Considerable voluntary power was soon gained; it was found, however, that the adductor longus muscle being retracted, controlled unduly the motions of the limb. Its tendon was, therefore, divided subcutaneously, and the entire range of motion was then restored. After four months the patient could bring his heel firmly to the ground; he could move the limb in every direction, and he could walk a distance of five miles without resting, and without subsequent pain or fatigue.

Art. 90.—*The influence upon the growth of the Bones of Paralysis, Disease of the Joints, Disease of the Epiphysial Lines, Excision of the Knee, Rickets, and some other morbid conditions.* By Dr. Humphry, Surgeon to Addenbroke's Hospital, Cambridge.

(*Proceedings of the Royal Med. and Chir. Soc.*, April 8, 1862.)

The paper consists chiefly of the account and measurements of numerous cases and specimens, and the following are the principal conclusions:—Paralysis is usually attended with a deficiency in the growth of all the bones of the part affected; this is most marked in the segments where the paralysis is most complete. Its effect, however, is very irregular. Disease of an important joint, causing anchylosis or preventing movement in the joint, is often attended with imperfect growth throughout the limb, most marked, however, in the segments contiguous to the diseased joint. It is probable that anchylosis of the hip, in childhood, may induce deficiency of growth on that side of the pelvis, and so be a cause, in the female, of difficult parturition. The author has not, however, been able to substantiate that point, and would be obliged by information bearing on the question. Disease in the epiphysial lines of bones deserves more attention than has usually been given to it. It is often, though not always, followed by impairment of the growth of the bone affected, and sometimes of the whole limb. It is most frequent and most deleterious at the lower end of the femur, where the growing process is more active and longer continued than in any other part of the body. In a segment of a limb where there are two long bones, as the forearm or leg, and one of them is stunted by disease, the other commonly is so too, but not necessarily. Thus the fibula sometimes outgrows the tibia, and runs below, or ascends above, its proper level with regard to

it. Excision of the knee, if the epiphysial lines are removed, is followed by marked arrest of growth in all parts of the limb. If the epiphysial lines are spared, the growth, in most instances, keeps pace with that of the opposite limb. In some cases this is not so, owing, perhaps, to the effect of the preceding disease upon the limb, or to the epiphysial lines becoming involved and destroyed in the suppurative processes that follow the operation. Hence the proper growth of the limb, after excision, cannot be calculated on with certainty in any particular case. Still the short limb, even when there is a considerable difference between it and its fellow, is commonly so useful that the fear of arresting the growth of the limb is not a fatal objection to the operation in young subjects; and, after the age of fifteen or sixteen, it need scarcely to be taken into account. Rickets is characterised by a want of proper growth in bones, even more decidedly and more uniformly than by preternatural curvatures in them. The imperfection is commonly noticeable, more or less, in all parts of the skeleton; but is most marked in the limbs, and most of all in the proximal segments of the limbs. These segments of the limbs; *i. e.*, the thigh and the arm, grow more quickly after birth than other parts of the body; and the want of growing power attendant on rickets tells accordingly in a peculiar manner upon them. A bulging and knottiness at the epiphysial lines is a common feature in rickets, and is apt to be mistaken for swelling of the ends of the bones, which is very rare, except in the intra-uterine and infantile periods. This bulging is due to the calcification of the epiphysial stratum of cartilage not taking place in a proper manner, so that the part yields, or is squeezed out, and then undergoes ossification. The condition is most frequently observed at the lower end of the femur and at the upper end of the humerus.

(D) CONCERNING INJURIES AND DISEASES OF VESSELS.

ART. 91.— *On the treatment of Aneurism of the extremities by flexion of the limb.* By Mr. ERNEST HART, Surgeon to the West London Hospital, &c.

(*Proceedings of Royal Med. and Chir. Soc.*, Jan. 28, 1862.)

In this communication Mr. Hart again brings under notice this simple plan of treating aneurism of the extremities by flexion, a plan which has the effect of considerably retarding the course of the blood through the main artery, and of almost or altogether extinguishing the pulse. It is now pretty clearly established and generally accepted, that the object in treating aneurism is not to cut off the supply of blood, or altogether at once to arrest circulation in it, but to cause such a retardation of the current as would lead to the gradual deposit of fibrinous laminæ in the interior, and so effect its gradual consolidation. The former method is uncertain and dangerous; the latter safe and permanent in its results. In the case in which the author first applied the method of flexion to the treatment of popliteal aneurism, and in that in which Mr. Shaw subsequently tested it, they

were completely successful in obtaining the latter result. Mr. Hart has met with similar success in the following case:

Case 1.—In September, 1860, a healthy and robust-looking man, æt. 35, was sent to him by Mr. Bridge for treatment of a popliteal aneurism of the left leg. It was of the size and shape of a large lemon, projecting on the inner side of the ham. It had a loud bruit and very perceptible thrill, but was not entirely reducible. The skin was somewhat discoloured over the tumour as though from a recent bruise. The patient had noticed the existence of this pulsating tumour for nearly two years. It had increased somewhat in size during the first nine months that he had observed it, and he had several times thought of seeking advice, but as he had felt little pain from the disease, he had neglected its cure. About three weeks before the author saw him he had received a blow in the region of the tumour, and since then he had suffered pain in it, and the swelling had increased. The arteries of the leg pulsated distinctly, and there was no very marked dilatation of the veins below the knee. There was no history of gout or syphilis. A week was allowed to elapse before commencing any treatment. The discoloration of the skin was then no longer visible, and the aneurism was pulsating distinctly as before. Mr. Hart desired in this case to separate the effect of treatment by flexion as clearly as he could from any collateral or adjuvant agencies. He did not, therefore, employ any form of medical treatment whatever; nor did he invalid the patient by enjoining the horizontal position and confinement to bed. He rolled the leg in a flannel bandage from the foot upwards, stopping below the tumour so as not to compress this in any way. He then bent the leg on the thigh, and retained it in the flexed position by means of three pieces of bandage attached to the ankle and along the leg. The patient was allowed to rise and go about the room by the help of a crutch. The forced flexion of the leg entirely arrested the pulsation of the tumour. Complete flexion caused, however, an inconvenient degree of pain, and after eight hours he relaxed the bandages so as to leave the leg in a semi-flexed position. At night he ordered one grain of solid opium. The patient slept well. Next morning the tumour still pulsated distinctly. He again completely flexed the limb, and during the next two days it was retained in that position, being unmoved during the night. The patient moved about freely the whole time, by the help of a crutch and stick, and occasionally of a wooden pin leg roughly adjusted below the bent knee. He occupied himself in reading, writing, and smoking. He complained of pains in the knee-cap, but after the first night he slept moderately well without opium. On the fourth day Mr. Hart somewhat relaxed the bandages, and examined the tumour. He had the satisfaction to find that it was as nearly as possible solidified; a faint thrill, however, could be detected by placing the hand on the tumour. He again replaced the leg in the position of forcible flexion, and retained it so until the end of the sixth day. He could not then find on examination any trace of pulsation or thrill. The articular arteries beat perceptibly, and he concluded that the collateral circulation was satisfactorily established, and the aneurism consolidated by the deposition of laminated clots. As a desirable measure of precaution, he retained the leg in the semi-flexed position for another week—a proceeding to which the patient, who fully understood the nature and object of the treatment, offered no objection. The subsequent progress of the case was in every way satisfactory; it offered no peculiarity worthy of note. It was three weeks from the conclusion of the treat-

ment before the patient ceased to limp from the stiffness of the knee caused by its confinement.

It seems to the author that this case sufficiently establishes the simplicity and efficiency of the treatment of popliteal aneurism by flexion in certain cases. Here he is enabled to effect the cure practically in six days, without the use of any apparatus—without the intervention of any watchers or assistants—without risk or danger. This patient has been cured of popliteal aneurism—a disease formerly so formidable—without being confined for a day to bed. In order to afford the grounds of a judgment on the relative merits of the flexion treatment, it may be proper to add a brief *resumé* of the cases which have been successfully treated by other surgeons in this country who have already employed this method of treatment. Some of these cases have been treated by flexion solely; in others, that method had been conjoined to the treatment by compression.

Case 2.—*Popliteal aneurism; recurrence after ligature of superficial aneurism; treatment by compression unsuccessful. Cure by flexion of the leg.* By James Spence, Esq., F.R.C.S.E.—T. H—, a coal-carter, was admitted into the Royal Infirmary, Edinburgh, under the care of Mr. Spence, in August, 1858, with a pulsating aneurismal tumour, of the size of an orange. The superficial femoral had already previously been tied in May, 1857, with the effect of producing solidification of the tumour. But the pulsation recurred a few days before this second admission, and the tumour was then as large and pulsating as violently as before the artery was tied. Compression was carefully employed over a period of upwards of five months, but the tumour was at the end of that time increasing instead of diminishing. The patient left the house for some weeks, but returned, desiring to submit to any operation that might be thought necessary. The following is the sequel of this very interesting case in the words of the surgeon:

"On examining the aneurism at this time, its condition was as follows: it was the size of a pretty large orange, and pulsating strongly; the femoral artery could be felt to pulsate for about four inches below Poupart's ligament, ceasing to beat about an inch or less above the point where the superficial femoral had been tied. Pressure on the common femoral completely and readily arrested pulsation in the sac. Compression of the superficial femoral above the point tied also did so, but required very firm pressure to be made directly backwards. Compression along the course of the superficial femoral below the point tied produced no effect until it was made over the lowest part of Hunter's canal, when the pulsation of the aneurism became thoroughly commanded by it. Under these circumstances, after weighing the comparative chances of success between ligature of the external iliac, or the lower part of the superficial femoral, the latter plan was decided on, and the patient willingly gave his consent. But as the case did not seem a very hopeful one, it was thought as well to try the plan of flexion of the leg upon the thigh recently proposed. On bending the limb fully, all pulsation was at once and completely arrested, and the limb was bandaged in that position. But the patient could not bear such flexion to be kept up. Accordingly, a slipper, with a slip of bandage sewed to the heel, was fastened to the foot, and the slip of bandage was then fastened to a loop connected with a broad bandage round his pelvis, and this gradually tightened, so as to increase daily the flexion of

the leg on the thigh. This treatment was commenced on the 20th May, 1859. On the 23rd, the pulsations were weaker, but returned when flexion of the limb was discontinued. On the 27th, the pulsation diminished; tumour smaller and firmer. There was still a tendency to increase of pulsation when the limb was allowed to remain straight for any length of time. On the 6th of June, the pulsation was scarcely to be felt in the aneurism, even when flexion was discontinued. The tumour felt solid and smaller, and enlarged anastomosing vessels could be felt over it and around the knee. The patient was now allowed to walk about with crutches, the affected limb being suspended in a flexed position. When in bed or sitting in the ward, he was desired to extend the leg occasionally, and not to keep it constantly bent. On the 23rd of June, there was not the slightest pulsation to be felt in the aneurism, which was firm and considerably diminished in bulk. Several very large anastomosing vessels could be felt over the tumour, the limb was of good heat, and there was no stiffness of the knee joint. I kept the patient for about three weeks longer in the hospital under observation, and he was dismissed cured. Since then he has returned to his usual occupation of coal-carter, which requires him to walk considerable distances, but when I last saw him there was no tendency to return of the disease."

Case 3.—*Aneurism of the popliteal artery successfully treated by flexion combined with pressure.* By Oliver Pemberton, Esq., Surgeon to the General Hospital, Birmingham.

Case 4.—*Traumatic aneurism of the radial artery successfully treated by flexion and compression.* By R. M. Craven, Esq., Hull.

Case 5.—*Aneurism of the left popliteal artery, cured in sixty-eight hours by the combination of flexion and compression.* By Leith Adams, M.B., Surgeon to the 22nd Regiment.

Case 6.—*Popliteal aneurism; compression; great increase of tumour; flexion of limb; cure.* By William Colles, F.R.C.S., Surgeon to Steevens' Hospital, Dublin.

Case 7.—*Popliteal aneurism cured by forcible flexion.* By Augustin Prichard, Esq., Surgeon, Bristol.

Mr. Hart is aware of the fact that the flexion treatment has not always been successful. In cases under the care of Mr. Paget, Mr. C. H. Moore, and Mr. Birkett respectively, it had been employed, and disused as ineffective. The first two were, however, cases in which the contents of the aneurismal sac escaped by rupture or ulceration. These are severe forms of the disease in which extreme treatment is always likely to be required. In all three compression also failed, and ligature was resorted to. In the hands of other surgeons the method had been found painful, and apparently abandoned on that account. On this head he would only remark, that other methods of treating aneurism are commonly both more painful and tedious, as well as attended with greater risk.

The first results of any method of treatment are likely to be, as they always have been, less perfect and less uniformly successful than those which follow upon a larger experience and a more assured application. It is probable that attention to certain points of detail may tend to prevent pain and inconvenience. By carefully bandaging the limb, support is given to the superficial veins and rest to the contracted muscles. Friction of the limb upwards may serve the

same purpose. Inunction of the knee-cap with oil and chloroform diminishes the sensation of stiffness and relieves pain. By allowing the patient to rise from his bed and dress himself, much of the tedium is obviated and coagulation of the fibrin aided. Sleep follows much earlier at night. Any favorite habit, such as smoking, may be usefully permitted, with the same object. It is desirable to bespeak the assistance of the patient himself, by explaining the nature of the malady and treatment. Flexion should be employed with care and graduated. The author's reason for referring to these minutiæ might be found in the past history of this method and of the cognate treatment by compression, in which attention to minute details had been shown to produce a remarkable increase in the success obtained. For success a watchful and intelligent interest was necessary.

In reviewing the cases already successfully treated by flexion, it seems to the author that there are many elements for a favorable judgment. Compared with compression, it had the advantage of not requiring the constant and watchful attention essential to the success of that method. No instruments were employed, and no assistants were needed. There was no risk of ulceration of the skin, of erysipelas, or of that other rare effect described by Mr. Oliver Pemberton —the production of aneurismal varix at the site of pressure. If not ultimately successful, it would still have had the effect of beneficially developing the collateral circulation. Of course, where practicable, it would always be preferred to the use of the knife. The interesting case of recurring popliteal aneurism under the care of Mr. Spence, affords an instance in which flexion effected a cure where the superficial femoral artery had already been tied, and compression during five months had failed; the undesirable alternatives being the ligature of the femoral close to the sac or the external iliac, under unfavorable circumstances. Mr. Spence states: "From what I saw of the plan of flexion of the limb in this case, I would have great hopes of its success as a curative measure, far simpler and more efficacious than any form of compression I have seen employed, devoid of all its risks, and not interfering with, but rather beneficial as a preparation for, ligature of the artery, should it fail in itself accomplishing the cure."

(E) CONCERNING OPERATIONS.

ART. 92.—*On Amputation by Rectangular Flaps.* By Mr. O. PEMBERTON, Surgeon to the Birmingham General Hospital, &c.

(*Medical Times and Gazette*, Dec. 21, 1861.)

In this paper Mr. Pemberton gives the results of twenty-two cases of amputation by Mr. Teale's method (by rectangular flaps), and contrasts them with the results of the same number of cases of amputation by ordinary methods—these cases all occurring during the last two years in his own practice or in that of his colleagues in the Birmingham General Infirmary. In the first series, five died and

seventeen recovered, the deaths being at the rate of one in $4\frac{1}{2}$; of the twenty-two, the operation was for disease in sixteen; for accident in six. In the second series, seventeen recovered and five died; the rate of mortality being therefore identical. Here the operation was for disease in fourteen, for accident in eight. In reference generally to Mr. Teale's mode of operating by rectangular flaps, Mr. Pemberton's observation and experience lead him to these conclusions:—

"1. That an admirable covering for the end of the bone is in almost all cases attainable, capable of bearing direct and continued pressure in locomotion.

"2. That in the lower third of the thigh and in the lower third of the leg a more serviceable stump is obtained than can be produced by any other mode of amputation at present in practice.

"3. That in other parts of the same limbs the flap amputations in ordinary use realise all that is promised by the rectangular method; and as the bone does not require to be sawn through so high up by some inches in the former as in the latter operation, they are, in the majority of instances, preferable.

"4. In the upper arm and forearm the rectangular method is by no means to be recommended in preference to the circular and flap methods.

"5. That at present we are not warranted in assigning to rectangular amputations any special immunity from sloughing, the chances of necrosis and exfoliation, or from phlebitis and pyæmia, in comparison with other amputations.

"6. The question of diminished mortality rests on the 103 cases recorded by Mr. Teale, and, so far as that gentleman's experience extends, is eminently in favour of the rectangular method."

ART. 93.—*Five cases of Neurotomy for painful affections of the limbs:* by Mr. REDFERN DAVIES, Surgeon to the Birmingham Workhouse Infirmary.

(*Dublin Quart. Journ. of Med. Science*, Nov., 1860.)

One of these cases, the first, will serve as a fair example of the rest:—

CASE.—*Past history.*—William Whitelaw, æt. 54, formerly a soldier, and afterwards a labourer, in May, 1856, whilst at work upon the roof of a house, fell to the ground, a distance of some forty feet. He was immediately conveyed to an hospital, where he was found to have sustained a compound fracture of the middle-third of the tibia, and lower-third of the fibula, the bones, to use his own expression, "sticking out."

He remained in the hospital about five months, when, his limb being to all appearance sound, he was discharged.

Notwithstanding, however, the apparent soundness of the leg, he was tortured with a similar pain to that he now complains of, and which had been coming on during the healing of the fracture. He has since been an inmate of several institutions, receiving but temporary relief. The wound at the fibula has twice opened, small portions of bone coming away.

Present state.—November 20, 1857. Upon examination, I found him

to complain of a pain which commenced in the toes on their dorsal surface, extending over the foot, anterior surface of ankle, and leg, as high as the original site of the tibial fracture. The pain here stopped, but was again felt in a line running transversely from the last-named spot to the interval between the fibula and the edge of the gastrocnemius; thence it descended to the outer ankle and outside of the foot, joining with the pain on the dorsum. The pain was described as being constantly present, worse at times, and of a gnawing character; it was increased to intolerable agony upon moving the limb, or touching any portion of the surface included within the affected area. Upon jolting the heel, or bending the toes, a feeling like "pins and needles," but of a very extreme painfulness, is experienced. This, however, only reaches as high as the fractnre of the tibia. When the limb is embraced with both his hands, thus making firm pressure with the thumbs over the first intermuscular space on the anterior surface *above* the seat of the fracture, the pain situated over the dorsum of foot and front of leg becomes very much diminished; but that between the fibula and tendo Achillis, &c., remains unaffected. The limb is shrunken and flabby; the foot directed downwards; and the toes flexed and cold, and destitute of feeling; the axis of the limb is quite natural, and the bones in good apposition, with no undue amount of ossific deposit around their ends; the integument around the site of the fracture reddened, depressed, and adherent to the bone; the ankle-joint is uncompromised; he denies syphilis, and there is no evidence of any other disease.

Diagnosis.—That a portion of the anterior tibial and musculo-cutaneous nerves were implicated by the fracture of the tibia, and its subsequent union. This would account for the pain on the dorsum of the foot and the anterior surface of the leg; and by reason of the communication between the communicans peronei and the external saphena nerve, so was the pain sympathetically experienced in the interspace between the fibula and tendo Achillis, and in the outer part of the ankle and foot.

Operation.—November, 1857. In the presence of many of my professional friends, Mr. Jauncey giving chloroform, I made an incision two inches long over the axis of the external popliteal nerve in the popliteal space, taking the inner border of the biceps tendon as a guide. The fascia being exposed, and a portion of it pinched up by forceps, it was divided on a grooved sound; by gently separating the areolar surface, the nerve readily came into view, and an inch of it was cut out. The edges of the wound were then brought together by suture. Directly upon recovering from the effects of the chloroform, he declared that the old pain was gone, and he could bear to have the limb jolted. For the three succeeding months, during which time he was under my observation, he steadily progressed; and the following is the report entered on the minutes of the Medical and Chirurgical Society of Birmingham, to whom I had the honour of presenting him, at the end of the above time:—

"The limb, when in a state of rest, has the toes drawn downwards, the foot turned inwards, and the heel raised. All power of extension is completely gone; sensation is less acute than on the opposite side, but it is gradually improving; he also perceives himself that the dorsum of the foot and anterior surface of the leg are much colder than the posterior and plantar surfaces; and to the thermometer there is a difference of four degrees in the temperature of the parts above and below the division of the nerve; a similar difference exists, likewise, between the temperature of the two legs.

"Since the operation, there has been no return of pain; and he has this day (February, 1858), walked, with the aid of a slightly-raised heel to his shoe, a distance of six miles, in perfect ease and comfort."

ART. 94.—*A substitute for Sutures.* By M. VÉSIGNÉ, Senior Surgeon to the Hôtel Dieu at Abbeville.

(*Journ. de Méd. et Chir. prat.*, Dec., 1861.)

The principal element of M. Vésigné's contrivance consists in several pieces of strong tape similar to those used for fractures, bearing at the end destined to be free a small square of linen in which a pin may be fixed. The remainder of the apparatus are pins, waxed thread, and collodion. The parts being ready for immediate union, the surgeon prepares a number of pieces of tape proportionate to the length and depth of the wound. Each ribbon bears at one end a pin inserted perpendicularly to its length. The operator then secures the strips of tape to the skin on each side with collodion, leaving the extremity which bears the pin unattached, at about four lines from the edges of the wound, where it should lie on a thin layer of agaric or lint to avoid chafing of the integument. The strips of tape must further correspond to each other with perfect precision, in order that, when drawn together, they may cause no pursing of the lips of the division. When evaporation of the ether causes the strips of tape to adhere with sufficient firmness to the skin, an assistant closes the wound, while the surgeon joins every pair of pins by a twisted suture. Each suture should be made with a distinct thread: this allows of partial relaxation or separate tightening of the ligatures.

ART. 95.—*Another substitute for Sutures.* By Mr. H. T. HIGGINSON.

(*Dublin Med. Press*, Jan. 29, 1862.)

Mr. Higginson says:—"A plan I have seen used once or twice and succeed very well, I think proper to bring before the public notice, so that it may be more generally tried, as it not only does away with one of the most painful parts of an operation, that of putting in the sutures, but also assists in the quicker healing of the part, not being attended with that inflammation which must, to a certain extent, be set up by the suture acting as a foreign body, no matter of what material it may be made of, but it also gives support to the neighbouring parts, and instead of the dragging force which is employed by the suture keeping the surfaces together at the particular point where it is introduced, from the natural tendency of the lips of the wounds to gape asunder, this force is extended over a large surface. This may be accomplished by spreading chamois leather, or such resisting substance, with lead plaster, rather quickly, so as to retain a good hold, and by cutting this into strips of a sufficient width, and having heated it, apply a strip along each margin of the wound, coming almost to the edge, one strip is then stitched to that of the opposite side, thus bringing the opposed surfaces of the wound

together without any pain being experienced by the patient, the wound may then be dressed in the usual way. This plan enables you to examine the wound without having to remove anything but the dressings, the plaster not being applied exactly at the edge leaves a space through which you can see whether the surfaces have united or not. It is very serviceable in amputations of the breast, or such parts where the cuts are generally regular; it might even be found practicable in flap or other operations, if the plaster was cut of a proper shape."

ART. 96.—*Hints on Stump making.* By Mr. B. FRANK PALMER, Maker of Artificial Limbs.

(*Phil. Med. and Surg. Reporter*; and *Dublin Medical Press*, April 2, 1862.)

"It is obvious," says Mr. Palmer, "that artificial joints and tendons can never be made to act by mere volition, yet the well-adjusted substitute may be made to respond to the movement of the living member; and it requires no argument to show that the mechanical limb may be moved by lever power as readily as the natural one. The stump may be termed a lever, which, aided by auxiliary appendages attached to the thigh or body, moves the false leg. Upon the length and fitness, then, of the stump depends in a great measure the success in locomotion. The greatest length possible should be saved (except when variations of the rule are demanded), and if the living portion be radically defective in length or flexibility, art, though it may mitigate the suffering, can never fully supply the deficiency. In amputating a thigh, the condyles of the femur should always be fully removed, but no greater portion, unless the safety of the patient demand it. The best amputation possible is of the leg, ten inches below the inferior edge of the patella, though it is always advisable to amputate high enough to secure a good flap, which is very important, as it prevents such unpleasant sensations as arise from a slight tension of the thin skin too often found to be the only covering of a protruding bone. If a stump must necessarily be less than four inches in length below the knee, amputate just below the tuberosity of the fibula, so that the knee may be flexed, and an artificial joint applied without exhibiting a protruding stump. This rule will apply in amputation for anchylosis of knee, if the joint be not diseased; should it be extended, however, amputate above the knee. Perfect use of the knee-joint should always be secured, even if the stump is too short for use in walking.

"Dr. Pancoast in his work has well said that the place of amputation 'must be held subsidiary to another object, that of affording the greatest facility in the adjustment of the means of artificial support.' Such also was the opinion of the great Ambrose Paré and of Baron Larrey.

"With the present means of adapting a substitute to a flexed knee, so as to give perfect motion of an artificial knee-joint, and without perceptible elongation or enlargement of the thigh, I find very superior advantages in this stump. Amputation at any point below the knee is preferable in all cases, if safety in healing

may be apprehended, and if there be no abnormal condition of the knee-joint to forbid such an election. If the knee be diseased or anchylosed, and the joint fully extended, or only partially flexed, in such manner as to prevent supporting the weight of the body on the knee, then, indeed, the lower third (or fourth) of the thigh should become the point of election, otherwise never.

"The operation for the application of this leg should be so performed as to allow the end of the stump, when flexed, to fall one inch back of the thigh, to form a sort of grapple, as it fits the concavity of a socket, by which means the limb may be held securely in its place without any appendages connected to the waist or shoulders. The end of the stump is so secure from all pressure (in the hollow of this flexible socket) that use does not produce excoriation or inflammation, and I have in repeated instances applied the limb in the Jefferson College within six weeks from the day of amputation, without any danger of immediate or remote inconvenience to the wearer. Professor Syme's operation at the ankle-joint is recommended in a recent edition of Miller's 'Surgery,' as furnishing a stump 'more useful in progression' than an amputation above the ankle. This opinion is entertained by many eminent surgeons, with whom I regret to differ. I do not recognise all that is claimed for this operation, yet it may be preferable to excision of the foot through the tarsus, as done by Baudens or Chopart, or removal at any point above the metatarso-tarsal joint, as performed by Lisfranc. I occasionally have cases of amputation through the tarsus presenting well healed and eminently useful stumps. It is the case in Sédillot's modification of Chopart's operation, the cuboid and scaphoid bones remaining, to which the flexor muscles are so well attached as to counteract the antagonism of the tendo-Achillis, thus retaining the heel in a position to support the weight. But I should observe that these cases are very rare, and I am almost weekly appealed to by patients who, having suffered this mutilation, find that the careful treatment of years will not heal the stumps. The contraction of the gastrocnemii muscles causes such depression of the cicatrized surface that the least attempt at walking keeps up ulceration above the cicatrix, which is often followed by caries of the bones. I have taken several such cases to the Jefferson College for amputation above the ankle, all of which resulted most favorably. It is probable that no form of amputation practised within the last century has escaped my notice, and I have, I believe, examined the work of every leg-maker of any repute on either side of the Atlantic.

"I have fitted about 1000 limbs to thighs amputated within three inches of the perineum; 1500 to thighs not more than six inches long; nearly 1000 upon the knee (flexed); about 1200 to short stumps retaining use of the natural knee-joint; 1400 to longer stumps (the best); nearly 500 others, including several for disarticulation at knee and ankle-joints, and through the foot; some of the latter cases retaining only the os calcis, others the astragalus and calcis, others still, a part or all of the bones of the tarsus, and a few retaining the metatarsal bones. I have also made various instruments for congenital deformity. An ample and well-adjusted flap is, in all cases, highly desirable. The double flap of Liston is admirably suited to my uses.

In no case is the patient allowed to support his weight upon the end of the stump. Velpeau, Pancoast, Lisfranc, Baudens, and others, cite cases in which it is possible to do this in case of disarticulation of the knee or ankle. I have seen a German, named Gebhardt, who placed the end of his thigh—amputated above the knee—upon a cushion of hair in a peg-leg, and thus walked; and two of my patients, Mr. Moorhood and Mr. Butler, both of this State, having been amputated at the middle third of the leg, can walk in the same manner; but it would be dangerous in the extreme to allow this in active use, as, in case of a falling, or any unusual pressure, the bones might be forced through the skin. The weight of the body is supported by an even pressure around the whole leg, near the knee-joint (if amputated below the knee), and a flexible socket, attached by means of auxiliary side-joints, is laced to the thigh usually, to enable the patient to graduate the pressure as he finds most proper. If the thigh is amputated, the pressure is adjusted to its conical walls near the body, but there must be no direct pressure against the perineum, as excoriation would follow. The end must be entirely free from all pressure, as well as in case of application below the knee. The joints of the knee and ankle should be made perfectly flexible so soon as cicatrization will admit of full flexion and extension. The stump should be tightly bandaged for several weeks previous to the application of the artificial limb, to facilitate absorption and give the stump conical shape. I submit the following for the surgeon's consideration, in amputating the leg and thigh:

"1st. Place of election. The lower or third fourth of the leg. Flap operation. Remove the malleoli fully always. 2nd. The lowest point possible between the first place of election and the upper third at which a good flap can be made. 3rd. Immediately below the tuberosity of the fibula, if not practicable to save four inches below the patella, with full use of joint. 4th. The lower third of the thigh—ten inches from the perineum. Always fully remove the condyles of the femur. Flap operation. 5th. The utmost length possible, if necessary to amputate above the fourth place of election. Flap operation."

(F) CONCERNING ANÆSTHETICS.

ART. 97.—*New method of administering Chloroform.*
By Dr. SIMPSON, Prof. of Midwifery in the University of Edinburgh.

(*Edinburgh Medical Journal*, Dec., 1861.)

At a recent meeting of the Edinburgh Obstetrical Society, Dr. Simpson said, that for some time he had adopted Dr. Moir's plan of administering chloroform, and that by this plan anæsthesia was produced more rapidly, more safely, and with very much less chloroform. The plan is to lay *one* single layer of a towel or handkerchief over the patient's nose and mouth, taking care not to cover the eyes, and to drop on this single layer the chloroform drop by drop, until the anæsthesia is sufficiently marked; besides, none of the drug is lost by evaporation when it is administered in this manner, for the patient

inhales it at the moment when it is poured on the cloth, and inhales it mixed with a sufficient quantity of air, which is easily inspired through a single layer of any ordinary napkin. Dr. Simpson has often feared lest the lives of patients should be sacrificed by the careless manner in which, in particular, students and young practitioners sometimes applied the damp folded cloth over the patient's face, without admitting a sufficient supply of air; and he has no doubt that many of the deaths attributed to chloroform were due only to the improper administration of it, and were, consequently, no more chargeable on the drug itself, than were the many deaths resulting from accidental overdoses of opium, &c. But the dangers from careless and improper administration would be diminished if there were never placed over the patient's nose and mouth more than one single layer of cloth, moistened with a few drops of the fluid. The first patient to whom he had administered it in this manner had been chloroformed several times previously, and had never gone to sleep till an ounce and a half or two ounces of the fluid had been employed; but when administered drop by drop on a single layer of a thin towel, one drachm had sufficed to induce the most profound sleep. It had thus all the advantages that had ever been claimed for the complicated apparatus which some medical men were still in the habit of using. There was only one precaution to be attended to in employing chloroform in this manner, viz., care should be taken to anoint the lips and nose of the patient beforehand with oil or ointment, to prevent the skin from being injured by the contact of the fluid that resulted from the close application of the wetted towel to the patient's face.

SECT. II.—SPECIAL QUESTIONS IN SURGERY.

(A.) CONCERNING THE HEAD AND NECK.

ART. 98.—*Case of Laceration of the Brain, without fracture of the skull.* By Mr. JOHN ADAMS, Surgeon to the London Hospital, &c.

(*Medical Times and Gazette*, April 19, 1862.)

CASE.—This patient, a man of intemperate habits, whilst cleaning paint outside a house, on a ladder twelve feet from the ground, suddenly fell and struck his right temple against the door-step. There was considerable doubt as to the cause of his falling. One person who saw it, said that the ladder slipping was the cause; and another person, who also saw it, said he fell suddenly as if in a fit, and drew the ladder with him. His hands were clenched, and he is stated to have foamed at the mouth. He was taken up in a state of insensibility, and brought immediately to the hospital.

On admission he was unconscious, but could be roused with great difficulty, and was then very irritable, and would soon relapse into his former condition. His body and extremities were cold; pulse slow and feeble; breathing stertorous, and pupils equal and contracted. There was a lacerated wound of the right temple, about an inch in length; the bone beneath

was carefully examined, but no fracture nor depression could be found, neither was there discovered any wound, swelling, or other injury at any other part of the head. He was placed in a warm bed, his head was shaved, a bladder containing ice applied (the wound having been dressed), and bottles of hot water to the feet, and five grains of calomel was administered. Milk diet and beef-tea were ordered, but the patient could hardly be made to swallow.

On the following day, when seen by Mr. Adams, he was in the same condition; the contents of the bladder and rectum had been discharged involuntarily. Towards evening the patient became worse; the pupils were now dilated; pulse 140, full and hard; the mouth was drawn to the left side, and the limbs of this side were violently convulsed, those of the opposite side being paralysed both as regards motion and sensation. Mr. Adams was sent for, and on his arrival made an exploratory incision, extending the wound in both directions, but detected no fracture nor depressed bone, and accordingly made no change in the treatment.

On the following day (Sunday) the symptoms were greatly increased in severity, and Mr. Adams not being at home, Mr. Gowlland was sent for, with a view to an operation being performed. After careful examination, Mr. Gowlland coincided with Mr. Adams, and declined to operate. The patient gradually sank, and died four hours afterwards, not having rallied at all since the accident.

It may, perhaps, be worthy of remark that this man's mother is stated to have had several fits in her lifetime, in one of which she died.

Post-mortem examination forty hours after death.—External appearances.—Body moderately muscular, cadaveric, rigidity not persistent. Superficial veins of abdomen and other parts of the body extremely congested. *Head.*—A scalp wound two and a half inches in length, partly lacerated and partly incised, occupied the right temporal fossa. The skull, when denuded of pericranium, was carefully examined, but not the slightest trace of fracture could be discovered. On opening the skull, a tumour the size of a small orange lay beneath the dura mater, and on making an incision into it, a quantity of dark coagulated blood escaped. This clot was underneath the left parietal bone, at about its nervous centre, and rather posterior. *Brain.*—Weighed fifty ounces, of pretty firm consistence, and otherwise healthy, except that on the exterior part of the left cerebral hemisphere, rather towards the side, was a lacerated wound about half an inch in length, and corresponding with the clot exterior to it. From this wound there issued forth a small quantity of dark, venous, coagulated blood. At this part of the brain the consistence was more than ordinarily soft. Other organs not examined.

Art. 99.—*Case of Spontaneous Dislocation of the Crystalline Lens.* By M. Fischer.

(*Archiv. Gén. de Méd.*, Jan., 1860; and *Gaz. Hebdom. de Méd. et Chir.*, March 8, 1861.)

The memoir from which this case is taken contains a good deal of evidence which tends to show the possibility of spontaneous dislocation of the crystalline lens. In the case itself, however, there is an unfortunate fact, namely, this—that the first disturbance in the patient's vision commenced very soon after a fall upon the head from a considerable height.

Case.—Jean Nicole, æt. 23, a day labourer, was admitted into the Salle

St. Augustine, Hôpital St. Louis, Paris, under the care of M. Richet, on the 18th of April, 1860. In 1845, he fell upon his head from the second story of a house. After this, he is said to have been more short-sighted—a statement implying previous myopia. He is said, also, to have had soon after this fall amblyopia, with sparkling synchysis of the left eye. In 1850, while bending forwards, he experienced a feeling of shock in the left eye, and its vision became troubled, until he happened to throw his head backwards, when this troubled vision passed off. Afterwards he found that he could produce this latter phenomenon at will, by bending his head forwards and backwards. In 1851, he was carefully examined by M. Larrey, at Val-de-Grâce, when it was found that the lens of the left eye was lying in the anterior chamber without any alteration in its transparency, and that it could be made to pass from the anterior to the posterior chamber, or back again from the posterior to the anterior chamber, simply by inclining the head in a suitable manner. For some time this moveability of the lens led to no serious inconvenience; afterwards the lens became opaque, and in October, 1852, a perfect cataract had taken its place. About this time M. Larrey performed the operation for extraction with unfortunate results, the sight of the eye being entirely lost. At this time the right eye was myopic, but its sight, in other respects, was satisfactory.

A few days before his admission into the Hôpital St. Louis on the present occasion (April, 1860), he felt the lens of his remaining eye slip forwards. He was leaning forwards at the time. Remembering his former experience with the other eye, he immediately threw his head back, when he had the satisfaction of feeling the lens slip back into its former place. Both eyes are prominent; the anterior chamber of the right eye is larger than usual. The iris forms a funnel-like projection backwards; the pupil is large, irregular, and with its longest diameter directed transversely; the iris exhibits a curious unsteadiness (*tremulus iridis*), but it responds to sight with sufficient readiness. On bending the head forward, the lens passes to the bottom of the anterior chamber, with a disagreeable feeling of shock. The lens itself is perfectly transparent, but its colour is of a slight amber tint, so as to resemble a drop of clear oil. On bending the head backwards, the lens is seen to slip through the pupillary opening and bury itself flat in the posterior chamber, partially carrying along with it and keeping under it the lower portion of the inner border of the iris. Reading and writing have become difficult, but there is no difficulty in distinguishing surrounding persons and objects. There is no diplopia, but there is a sensation of bright light, surrounded by brilliant rays. After the dislocation of the lens, the vision is considerably confused, there is difficulty in telling how many fingers are displayed before the eye, even at the short distance of a yard, and the luminous objects become more numerous. Vision is best in the dusk, worst in a bright light, and in the open air. No signs of inflammation are present. For some time a collyrium containing sulphate of strychnia was used without any benefit.

The patient left the hospital on the 25th of May. Six months later he was admitted into the Hôpital Lariboisiére, under M. Chassaignac, without any material change in any of the symptoms which have just been related.

Art. 100.—*Statistics of the Operation for Cataract.* By M. Rivaud-Landrau.

(*L'Union Médicale*, No. 118, 1861; and *Medico-Chir. Rev.*, April, 1862.)

M. Rivaud-Landrau, of Lyons, states that during twenty years' practice he has performed 2317 operations for cataract—viz., 2073 by extraction, 177 by depression, and 67 by division. The following are the general results:

Extraction.—This was performed 2073 times, the double operations being 317, and the monocular operations 1756. The cataract was lenticular in 1825 instances, "semi-soft" in 83, capsulo-lenticular in 33, traumatic in 28, soft in 22, congenital in 22, and stony in 2. The results were successful in 1764, partially successful in 108, and unfavorable in 201 of the 2073 cases.

Depression was performed in 177 cases, 32 being double, and 113 monocular operations. The cataract was hard in 105, capsular in 23, "semi-soft" in 14, and traumatic in 10 of the cases. Success followed in 102, partial success in 25, and failure in 50 cases.

Division or breaking-up was performed in 67 cases, the double operations being 25, and the monocular 17. In 40 of the cases the cataract was congenital, in 11, "pulpy," in 12 traumatic, in 2 capsular, and in 2 "semi-soft." The results were successful in 55, partially so in 8, and unsuccessful in 4 cases.

As the general result of the 3217 operations, 1921 succeeded completely, 141 did so incompletely, and 255 failed. Nineteen successful secondary operations reduced this latter figure to 236. Comparing the different modes of operating with each other, it is found that the failures in extraction were 9 per cent., and in depression 39 per cent. The author has abandoned this latter operation, save in some special cases. He has not compared the operation by division with the other modes, as it is only applicable to certain cases of congenital and of soft cataract. Taking all the methods together, there were 236 failures in the 2317 operations, or about 11 per cent.

Art. 101.—*Partial Absorption of Cataract.* by Dr. Baines.

(*Medical Times and Gazette*, Jan. 11, 1862.)

Case.—A man, æt. 70. The cataract in question commenced after the failure of the operation of extraction had brought about inflammation and sloughing of the other eye. The absorption was only partial, and seemed to occupy the centre of the cataract, which apparently was chiefly capsular; the absorption assumed the appearance of a long slit, along the long axis of which shreds of flocculent, hazy matter hung. The patient obtained considerable vision in consequence, and was enabled to go about abroad by himself with safety.

ART. 102.—*On the use of Paracentesis in the treatment of Cataract.* By M. SPÉRINO, of Turin.

(*Medical Circular*, Feb. 26, 1862.)

The 'Presse Médicale Belge' reprints, from the columns of the 'Gazetta Medica Italiana,' a letter in which M. Spérino alludes to the importance which paracentesis is destined to assume, at some future day, in the treatment of cataract.

A long experience of the good results of puncture in various diseases of the eyeball, has induced him, he says, to try its effects in cataract. The facts he has observed in his private and hospital practice have shown that the evacuation of the aqueous humour every day, or even every second or third day, gradually restores the transparency of the crystalline lens, and ultimately re-establishes the visual function. It is interesting to watch the substitution of transparent for opaque materials, under the influence of the frequent renovation of the aqueous humour, and to witness the happiness of the patients at the progressive return of sight.

M. Spérino merely states his discovery for the present; he will soon publish his cases, together with the principles which have guided his conduct, his method of treatment, its influence in the different kinds of cataract, and the general results of his observation.

When a complete result is not attained by the mere evacuation of the aqueous humour, the operation has, nevertheless, a beneficial action on the vascular system of the eye, and it places the patient in circumstances more favorable to the success of couching, or extraction of the cataract.

M. Spérino concludes his letter with an invitation to M. Borelli, the director of the 'Gazetta Italiana,' to visit his patients, in order that he may see for himself, and share in the writer's personal convictions and hopes as to the ultimate success of the method.

ART. 103.—*Case of Penetrating Ulcer of the Cornea cured by Iridectomy.* By Mr. WORDSWORTH, Assistant-Surgeon to the Royal London Ophthalmic Hospital.

(*Lancet*, Oct. 5, 1861.)

CASE.—James C—, æt. 19, a shipwright, residing at Rotherhithe, applied at the Royal London Ophthalmic Hospital on the 29th May, 1861. He stated that he had suffered from ophthalmia of the left eye for some years; that a few weeks ago he had become worse, and noticed that there was a constant discharge of water from the eye; that the sight was almost gone, and that the eye felt soft and flaccid. He was induced to apply for assistance to one of the eye hospitals, where he was treated by the application of stimulants to the conjunctiva, belladonna to the brow, and blisters to the temple. This treatment was continued for some weeks without producing any improvement, and he was told by the surgeon that there was but little prospect of recovery, as the eye was getting softer in spite of all that could be done.

On admission—May 29th—I noticed a small fistulous aperture a little below, and internal to, the centre of the cornea, through which the aqueous fluid readily passed out; the pupil was contracted, and no anterior chamber was perceptible. A drop of solution of atropine was applied, which produced slight dilitation of the pupil. The pupil was quite free and tolerably round, the cornea clear, and the eye generally free from inflammation. He was in good health, but naturally depressed on account of the condition of the eye. He was directed to take quinine three times a day; to apply the belladonna fomentation occasionally, and a blister to the temple.

At the next visit—June 1st—no improvement having taken place, a solution of ten grains of nitrate of silver in an ounce of water was applied to the ulcer by means of a dropping tube; tonic and sustaining treatment was also continued. At the following visit the solution was applied as before, but of double strength, and repeated on the 8th. When I next saw him—on the 12th—I determined to excise a portion of the iris, and, as soon as a bed could be procured in the hospital, to admit him for the purpose.

June 19th.—Little or no change had taken place in the condition of the eye. Iridectomy was performed, a portion of the iris being drawn through a wound (made in the upper edge of the cornea) by means of forceps, and excised with scissors. There being no anterior chamber, the risk of wounding the lens was, of course, considerable; but no difficulty was experienced in removing about a sixth part of the iris.

22nd.—He left the hospital.

26th.—Mr. Hawkins, the house-surgeon, saw him in my absence, and wrote on his letter—"Fistulous opening closed; good anterior chamber."

The patient has continued to improve to the present date (July 22nd). the tension of the eye is normal, and he is able to see large objects. The ulcer having healed, there is a small point of iris adherent, producing the condition technically styled "myocephalon." The pupil is slightly drawn upwards, and but little larger than usual.

In the case above stated, the most prejudiced must admit the great value of iridectomy, by which a fistulous opening into the eye was closed within a few days, after all the ordinary means had been long and fairly tested. It affords palpable proof of the influence of iridectomy as a means of treating diseases of the eye that are either dependent on undue tension, or are at least proximately influenced by a disturbed relation between "the contained and the containing."

Art. 104.—*A new operation for obstinate Strabismus.* By Dr. E. Andrews.

(*Chicago Medical Examiner*, Jan., 1862; and *Amer. Quar. Jour. of Med. Science*, April, 1862.)

Several important details are omitted in this account of the following case. What was the accident by which the external rectus was ruptured without a corresponding injury to the coats of the eye? What was the state of the vision after the operation? was the eyeball motionless? was there any exophthalmos? These and other questions ought to have had an answer. "Certain cases of strabismus," says Dr. Anderson, "have always been considered incurable: among which are those which result from rupture of the external rectus oculi muscles, and

those which are produced by a wound or injury within the internal angle of the lids, fastening the eye by a cicatrix. Yet there occur instances of this sort where the cure is of the utmost importance. Such are those where the sound eye happens, subsequently, to be ruined, while the strabismic one is so turned inward as to be rendered practically useless for supplying its place. In such case the patient is actually in the condition of a blind man, though having one eye perfect in everything but position. Having two such cases on hand, I resolved to try a new operation on one of them. The external rectus muscle had been ruptured, allowing the cornea to turn toward the internal canthus so far as to be quite out of the reach of vision. Some surgeon had made an ineffectual operation on the old plan, the only result of which was to form a cicatrix, which glued the eye more firmly into its faulty position.

"Having administered ether and chloroform, I commenced, as in ordinary operations for strabismus, by cutting the conjunctiva on the inner side of the eye with the scissors; then, with a blunt hook, I picked up successively every band of cicatrix, tendon or fibrous tissue which interfered with the motion, and cut them off with the scissors until the globe could be freely turned outward, by seizing it with forceps and making traction. The eye was thus liberated from the bond, but as there was no external rectus, there was no voluntary power of keeping it to its place. I proceeded therefore as follows: Pinching up the conjunctiva on the outer side of the globe with the rat-tooth forceps, I cut it perpendicularly with the scissors, two lines from the cornea; commencing at the slit thus made, I dissected off the conjunctiva oculi from the slit outward quite to the lining of the lids at the external angle, denuding the inside and edge of the external canthus at the same time. I then took a silver ligature, bent in the form of a staple, and passed the two ends, first through the strip of conjunctiva remaining next to the cornea, and then through between the eyeball and external canthus, bringing them out through the skin at two points near the external border of the bony orbit. By drawing upon them, I rolled the eye well out, so as to press the cut edge of the conjunctiva against the denuded canthus, and then fastened the wire by a lead button. In this way the eye was secured firmly in a correct position. Some inflammation followed, which was readily held in check by cold water dressings. On the sixth day the suture was taken out, when the eye was found to maintain its correct position, and the operation proved a complete success.

"From the results of this experiment, it is obvious that some cases of strabismus which have hitherto been considered incurable, are capable of being rectified, and that this operation may restore useful vision to a class of patients which had been given over to virtual blindness, by the faulty position of the remaining sound eye."

ART. 105.—*A case illustrating the beneficial effects of Electricity in certain forms of Paralysis of the Muscles of the Eye.* By Dr. SOELBERG WELLS, Clinical Assistant to Mr. Bowman at the Royal London Ophthalmic Hospital (Moorfields), &c., &c.

CASE.—On May 15, 1861, I was called in consultation by my friend, Mr. Crosse, of Norwich, to see Mr. P—, a patient of his, who had been suffering some weeks from a paralysis of the external rectus muscle of the left eye, which was soon accompanied by an evident inward squint of the same eye. The patient was a gentleman, about twenty-five, of a florid, healthy complexion, but of a somewhat strumous diathesis. In the previous December he had had measles. In March (1861) he first complained of diplopia, and Mr. Crosse at once diagnosed paralysis of the external rectus of the left eye. This diplopia gradually increased in extent, greatly annoying and confusing the patient, who was almost incapacitated from writing, &c.; the squint also became more and more apparent. During March and April, alteratives, leeches, and blisters were prescribed; in the beginning of April he commenced to take iodide of potassium. * * *

As the affection had gradually progressed even under the skilful treatment of his medical attendant, I naturally looked about me for some other plan of treatment, in the hope that this might prove more successful. As I had seen electricity very much employed in Von Graefe's clinique in paralysis of the muscles of the eye, dependent upon peripheral causes, and had seen many admirable results from its regular and prolonged employment, I determined to try its effect in this case, and am happy to say that it rapidly effected a cure. The iodide of potassium was continued till June 13, but I do not think that the favorable turn the disease assumed was due to the action of this remedy, which had before the application of electricity proved unavailing even to arrest the affection. In order to free the patient from the annoyance of the diplopia, I directed the left eye to be covered, the prisms required to unite the double images being too strong and clumsy to wear—(16° for reading, 32° for distance).

June 30.—I saw him again—he is greatly improved, the inward squint is reduced to about a quarter of a line, and corresponding to this the diplopia extends only five inches (instead of two and a half feet) into the right half of the field of vision.

August 2.—Met him in the street, not the slightest inward squint, except on looking far to the left, is not at all annoyed by diplopia except in the same direction, but can follow his professional duties, read, write, &c., without any inconvenience. Left off electricity July 15.

September 3.—The mobility outwards of left eye almost normal. No convergent squint until the object (held at eight feet distance) is moved four feet into the left half of the field of vision when diplopia arises. I wished him to resume the electricity in order that the affection might be completely cured, but he had no opportunity of doing so, and I therefore ordered him to practise the left abductor by means of a prism of 5° with its base turned inwards.

November 12.—The mobility outwards has increased a little more, the outer edge of the cornea can be almost brought to the outer canthus. The convergent squint and diplopia now only arise when the object (still at eight feet distance) is brought five and a half feet into the left half of the field of vision. The patient considers himself perfectly cured.

The electricity was at first applied for five minutes daily, by Mr. Crosse, and this time was gradually extended to twenty minutes. One electrode, covered with moistened sponge, was applied to the skin of the closed eye, exactly over the paralysed muscle; the other electrode was placed on the temple. One of the rotating magneto-electric induction machines was used.

Electricity is indicated in paralytis affections of the muscles of the eye dependent upon peripheral causes, its action is especially marked in cases produced by rheumatism.

In conclusion, I must warn the reader against ever using the *continuous* current in applying electricity to the eye, on account of its deleterious effect upon the retina; we thould therefore always employ the extra current of an induction machine, using either a magnetic-electric or volta-electric apparatus.

Art. 106.—*On the treatment of Corneal Opacities by Galvanism.* By M. Philipeaux, of Lyons.

(*Gaz. Méd. de Lyons*, Avril and Mai, 16, 1861; and *British Med. Journal*, Sept. 7, 1861.)

M. Philipeaux refers to the attempts which have been made by ophthalmic surgeons to remove opacities of the cornea by galvanism. Pirogoff essayed the removal of cataract by this means, but failed. Türck, Isiglio of Corfu, and Willerand of Helsingfors, succeeded in removing spots on the cornea in this way; while the process failed in the hands of Quadri, Warlomont, Crussell, and others. This diversity of results is attributed by M. Philipeaux to the frequently defective method followed in applying the remedy, and especially to its employment in cases where no good effect could be expected. He then examines the results obtained by galvanism in each of the three forms in which corneal opacity is presented; viz., nebulosity—the slightest degree of opacity, arising principally from scrofulous inflammation of the cornea; albugo—a more opaque form, generally arising from abscess; and the opacity arising from the healing of a corneal ulcer. In the first form, where the effusion is seated in the surface, or in the most superficial layers of the cornea, nebula may be removed by the application of the negative pole, which Dumas has shown to have the property of dissolving albumen. In the second degree, the opacity is produced not only by albumen, but by fibrine; and here a radical cure is difficult, if not impossible. If the deposit be comparatively superficial, galvanism may dissolve the albumen, and thus partially remove the opacity: the fibrine cannot be removed, but the cornea may be rendered more pervious to light, and the sight may be improved. In leucomata arising from cicatrization, the application of galvanism has been found useless by M. Philipeaux. Thus, it is only in nebulæ, and partially in albugo, that galvanism does any good. In applying the remedy, the positive pole is placed on the tongue, and the wire of the negative pole, rounded at the end, is moved over the opacity for two or three minutes at most. The immediate results are, pain in the head; considerable lacrymation; and injection of the capillary vessels of the conjunctiva, sometimes with inflammation of this membrane. The headache is easily obviated by the use of

pediluvia, and by increasing the intervals between the applications of the galvanism. The lacrymation gives no trouble, as it ceases when the operation is concluded. The conjunctival injection is remedied by rest of the eye, occlusion of the eyelids, and temporary suspension of the galvanism. The application of galvanism should be suspended when there are signs of softening or acute ulceration of the cornea. If it be continued under these circumstances, inflammation may arise, and produce the most disastrous results.

ART. 107.—*Congenital Malformation of the Eyes in three members of one family.* By Mr. NUNNELEY.

(*Proceed. of Royal Med. and Chir. Society*, Dec. 11, 1861.)

During the summer of 1860, a young lady, aged fifteen, was brought to the author. She had recently been sent to a boarding-school, where it was noticed that the sight was defective, and that application to books caused pain in the eyes, which soon became inflamed. Mr. Nunneley found both globes smaller than natural, not perfectly round, but somewhat flattened, and rather soft to the touch. The sclerotic coats were vascular; the corneæ conical; the irides thin, dull, and tremulous; the pupils considerably towards the nasal side of the centre, and very imperfect in action. Both eyes were myopic. The left eye was in all respects worse than the right. By attention the inflammation soon subsided, and she is now able to read and sew with comparative ease.

An elder sister, who accompanied her, had a similar congenital condition of the eyes, but in a much less degree.

In a brother, then thirteen years of age, the author found a total absence of the iris in both eyes. The ciliary processes, if at all developed, were so in a very slight degree. The choroid appeared normal; in an ordinary light, of a dense black; in a reflected light, the vessels were seen to be well developed. The retinæ seemed to be natural, and the lens in each eye was then perfectly transparent. Though no difference could be detected between the two eyes, the sight of the right was more defective than that of the left. The boy had attended the village school, and learned lessons with the other scholars. A strong light was unpleasant, but he did not court darkness. Neither lenses nor diaphragms were of any benefit to the sight. A few weeks after this time, the lens in the right eye became muddy, and at the present date lenticular cataract has become fully formed, showing an expansion coequal with the cornea. The left eye continues in the same state as when first seen.

The father and mother have good sight. Some years ago, the author operated for congenital cataract in a first cousin (on the mother's side) to these young persons.

ART. 108.—*On a New Method of Removing the Eyeball.* By Mr. JAMES KEENE, late Surgeon to the West London Hospital.

(*Australian Medical Journal*, Jan., 1862.)

After some preliminary remarks, Mr. Keene writes :—"The subject having been placed in the recumbent position, I introduced the spring speculum, and, standing at the head of the patient, passed a silk thread through the eye, as in the old operation. I then held this silk in the left hand, making traction upon it, while, with a pair of sharp-pointed, curved scissors, held in the right, punctured the sclerotic as far as possible from the margin of the cornea. This was facilitated by drawing the silk towards the opposite side to which the scissors were applied. All the muscles of the eye were thus divided, their tendinous insertion being removed with the anterior half of the eyeball, while the posterior segment was left attached to the socket by the optic and ciliary nerves and vessels. To complete the extraction, the edge of the remaining sclerotic was held with a pair of ordinary dissecting forceps, while with the scissors slipped to the back its attachments were readily severed.

"I will not dilate upon the merits of this operation, which I believe to be original, but leave others to decide upon its value. I will only remark that the time employed did not exceed what is required for the division of two of the recti in the process of Bonnet."

ART. 109.—*On the cure of Short-sightedness, or Intraocular Myotomy.* By (1) Mr. VOSE SOLOMON, of Birmingham, and (2) Dr. JACOB, Professor of Anatomy and Physiology in the Royal College of Surgeons of Ireland.

1. (*British Med. Journ.*, Jan. 11, 1862.)
2. (*Dublin Medical Press*, Jan. 23, 1862.)

(1). The results of Mr. Vose Solomon's surgical treatment of "Myopia," at the Birmingham and Midland Eye Institution, are thus summed up :—

"1. Intraocular myotomy is a safe and expeditious method of relieving myopia. This relief is not temporary.

2. In many cases it obviates the necessity for wearing spectacles.

3. It has never injuriously affected the range of accommodation.

4. It tends to render the myopic eye more healthy by improving the nutrition of the choroid, retina, and vitreous humour.

5. It sometimes arrests a rapidly increasing myopia, and cures the accompanying choroido-retinal irritation.

6. It must tend to prevent the increase of staphyloma sclero-posticum, by regulating the internal ocular circulation, and lessening the convergence of the optic lines, and the straining efforts at accommodation which are said by Mr. Donders to be associated with the convergence.

7. The presence of a large staphyloma posticum does not neutralize

the effect of the operation, nor does always that of opacities of the cornea.

8. The degree of myopia does not in all cases bear a close relation to the lateral diameter of the staphyloma, as judged by an opthalmoscopic examination.

9. The earliest appearance of staphyloma posticum consists in an apparent flattening and scalloping of one side, generally the outer, of the optic nerve entrance.

10. At the present stage of the inquiry, the author is unable to assert that the operation is curative of staphyloma posticum; but he considers it follows, from 4, 5, and 6, that it renders that disease less dangerous to vision."

(2). Dr. Jacobs' conclusions are widely different. Commenting upon the preceding aphorisms of Mr. Solomon, he says:—

"1. This so-called "intraocular myotomy" is *not* a safe and expeditious method of relieving myopia.

2. In no case does it obviate the necessity of wearing spectacles.

3. It has probably in all cases injuriously affected the range of accommodation.

4. It does *not* tend to render the myopic eye more healthy, by improving its nutrition, for this plain reason, that there is no defect of nutrition at all.

5. It never arrests a rapidly increasing myopia, or cures an accompanying choroido-retinal irritation.

7, 8, 9, 10. *Staphyloma posticum* is a subterfuge, anything to the contrary notwithstanding in Berlin, Brussels, or Utrecht. If the "General Practitioners" of England and Wales are so ignorant or so credulous as to swallow these ophthalmological marvels, thus served up to them every week by their journalists, so be it, but we cannot quietly acquiesce in any such perversion in Ireland: the most delicate department of all surgery shall not be made subservient to any such tricks of trade if we can help it."

ART. 110.—*A Case in which the Osteoplasty was successfully applied to the Restoration of the Nose.* By M. OLLIER, Surgeon to the Hôtel Dieu, at Lyons.

(*Gaz. Hébd. de Méd. et Chir.*, Nov. 22, 1861.)

This case has a triple interest. It shows that osseous flaps may be formed, and that they will unite like cutaneous flaps: it shows, also, that the cranial bones may be denuded of their periosteum without the production of necrosis. Altogether, indeed, the result appears to have been highly satisfactory.

CASE.—A young woman, æt. 17, of a scrofulous habit, whose nose had almost entirely disappeared under the ravages of congenital syphilis. A deep, rugged hollow had taken the place of the natural projection, and all that remained of the organ were the rims of the nostrils, which rims, instead of being horizontal and directed downwards, were pressed back and directed upwards. The soft parts requisite for the restoration of the nose were borrowed from the forehead and cheeks; the new osseous framework

was formed, partly, by the remains of the nasal bone on the right side, with a portion of the nasal process of the maxillary bone on the same side, a few touches of the saw being required to free the parts; and, partly, by cutting the frontal flap down to the bone, and dissecting it up, so as to include the underlying periosteum. The object, that is to say, was to form the bony framework of the new nose, partly from the remaining fragments of the bones of the old nose, these fragments having been forced into the necessary position, but not completely broken off from their attachments, and partly from the new bone, which would be secreted eventually by the transplanted periosteum. All the parts united by first intention, or nearly so. At first, there were no evident signs of new bone, and the new nose was soft enough; at the end of two months and a half, when the patient left the hospital, a large quantity of new bone had formed, and the nose was nearly as firm as it ought to be. This case was communicated to the Parisian Academy of Sciences, and accompanied by photographs and casts, which showed very clearly that the operation had been attended with brilliant success.

Art. 111.—*Objections to Operations for Cleft Palate.* By M. Nélaton.

(*Journ. of Pract. Med. and Surg.*; and *Medical Circular*, April 2, 1862.)

M. Nélaton, it appears, declines all surgical interference in cases of this kind, and rests content with obturators and artificial plates. The chief object of the operation is to improve the articulation of sounds. It is a fact, however, that the opening may be closed without any very appreciable improvement in the utterance of the patient, and that this is the common result. This is the case equally whether the opening be closed by operation or by some mechanical contrivance, and this difficulty is only to be overcome, if it is to be overcome at all, by long and patient practice under a competent teacher. Is it not more judicious, therefore, if the same end can be attained with obturators and artificial plates, to spare the patient the pain and peril of an operation? M. Nélaton, for his part, is fully convinced of the advantages of the prudent line of conduct.

Art. 112.—*A new procedure for Cheiloplasty.* By the late M. Sdillot, of Strasburg.

(*Journ. de Méd. et Chir. Prat.*, Dec., 1861.)

Double hare-lip, with fissure of the nostrils, protrusion forward and upward of the incisor or inter-maxillary bone, and more or less irregularity of the mesian tubercle, which sometimes advances beyond the tip of the nose, like a proboscis, is one of the deformities, the cure of which presents the greatest difficulty. The ingenious procedure adopted by Blandin in similar cases, to straighten and preserve the incisor bone, is well known. He removed a triangular portion of the cartilage of the septum and of the vomer, and forced back the inter-maxillary bone into the free space thus created.

But surgery does not possess resources of equal brilliance for the restoration of the lip itself. Its lateral portions, remote from each other, are narrow, thin, atrophied, merged, as it were, in the cheeks, partly confounded with the ala nasi, separated from each other by the mesian tubercle, and these portions must not only be united, and form a regular lip, but the outlines of the nostrils have to be reproduced, and their margins closed.

After describing the processes already known, and especially those of Dupuytren, Clémot (of Rochefort), and of Mr. Philips, M. Sédillot says:

"If we consider these procedures as extreme resources, for which we should be grateful, whatever their defects may be, we are disposed to accept them as such, but we think it possible to aspire higher and to arrive at more satisfactory results.

"We remedy the atrophy and insufficiency of the lip by borrowing from the cheeks, as in many other anaplastic operations. An oblique incision, begun at about an inch above the ala nasi, is continued towards the free edge of the lip, down to its freshened surface. The mesian tubercle, cut in the shape of a lengthened V, partly serves to form the sub-nasal partition, and partly to constitute the lip, as has been already attempted in less favorable conditions. The cheek, loosened from its outward attachments with the maxillary bone, to a sufficient extent to admit of its being lowered, is united on each side by sutures with the opposite edges of the incision and the mesian tubercle. The outlines of the nose are thus restored, and the lip is increased in height and breadth by the entire extent of the flap, which is added to it. The whole of the freshened surfaces of the hare-lip are then united on the mesian line; by resorting to Mr. Philips's small flap, the operator obtains a lip, thick, well-formed, and of adequate height.

It is requisite to multiply the sutures, in order to obviate all displacement of the parts, and carefully to effect the union of the wounds, in order to insure immediate cicatrization. If pins and twisted sutures have been employed, it is expedient to remove them before they ulcerate the skin.

In case the cicatrices should subsequently present any irregularities, and be loose, thin, or pursed, they can easily be rendered linear, and all but invisible, by supplementary freshening."

M. Sédillot has, for several years past, applied this procedure to patients in whom the ordinary operation had failed, and, in most of these cases, with the happiest results. A very serious danger, however, to which young children are exposed, is pointed out by M. Sédillot: the under lip, temporarily enlarged by the contraction of the upper one, is drawn into the mouth during inspiration, and may become a cause of asphyxia. Attentive superintendence on the part of the mother, or of persons in charge of the child, is necessary to avert the occurrence of this formidable accident.

ART. 113.—*On the Coloration of the Lips after Plastic Operations.* By M. SCHUH, of Vienna.

(*Gaz. Hébdom. de Méd. et Chir.*, Sept. 15, 1861.)

In cases where it is necessary to form a new lip by a plastic operation, the newly made part may not present the natural rose colour. To remedy this defect, M. Schuh, in a patient under his care, devised the plan of tattooing with cinnabar. The outline of the lip having been marked with ink, an instrument, consisting of from ten to twenty pins fixed in a band, and covered with waxed thread to four lines from their points, is dipped in a paste of cinnabar and water, and plunged several times into the lip to the depth of three or four lines. The process gives rise to very little bleeding or pain. The cinnabar which remains on the surface of the skin is not removed until the next day. If any part be not sufficiently coloured, the defect is easily remedied. The colour had remained a year and a half in M. Schuh's case.

ART. 114.—*A Case in which the entire Tongue was successfully removed.* By Mr. NUNNELEY, Lecturer on Surgery in the Leeds School of Medicine, &c.

(*Proceedings of the Royal Med. and Chir. Society*, Dec. 10, 1861.)

CASE.—The subject of the case related in this communication is a man, æt. 35, who states that, with the exception of the disease in the tongue, he never had a day's illness. In early manhood he was not very steady, but for the last twelve years he has been so. He has been married many years, and has had eight children, the youngest being only six months old; all of them have been strong and healthy. There is no reason to suspect any syphilitic taint. For some years he has been employed on a railway, and latterly as a guard. From being a large, strong man, owing to the distress and pain he has suffered, and the inability to masticate food, he has become thin, weak, and anæmic. The disease, at first slow, had latterly made more rapid progress, and having not unfrequently been compelled to pass the whole day without food, owing to the pain the attempt to take it occasioned, he was wishful to submit to any operation which afforded a chance of not dying from starvation, which he anticipated would otherwise be the result. He had been subjected during nearly the whole of the three years the disease had existed to treatment of various kinds, both general and local, all of which he thought had been rather injurious than beneficial.

The disease, which was first perceived on one side of the tongue, had invaded the whole structure of the organ as far as the base. In the centre of it was a deep ulcer with irregular edges; the margin of the tongue was tuberculous and irregular, and the whole substance was dense, unyielding, and very hard; the size was somewhat, but not very greatly, increased; there was a constant offensive taste, owing to the dischage from the ulcer; the speech was considerably impaired. As removal of the entire organ, though difficult and dangerous, afforded the only means of recovery, and as the patient was quite willing to submit to the risk, the operation was determined upon.

Having experienced the difficulty of effectually strangulating any considerable portion of the tongue, and the distress it occasions, Mr. Nunneley was unwilling to employ ligatures for the whole, and resolved upon using the écraseur, first cutting an opening for it between the lower jaw and the os hyoides as deeply as could be done without fear of hæmorrhage, and also with the object of having as little structure to crush through as possible. In accordance with this, a small transverse incision was made just anterior to the os hyoides through the integuments, myo-hyoid and genio-hyoid muscles, by which a curved needle, sufficiently large to allow the chain of the écraseur, which was attached to it, to follow easily, was carried from the central line obliquely towards the left side of the base of the tongue into the mouth, and out of the mouth at a corresponding point on the right side, through the same external aperture by which it had entered. The chain, thus carried across the extreme base of the tongue, was then attached to the racket-bar, and the écraseur set in motion, when, owing to the defective rivets connecting the link of the chain, before any strain whatever was put upon the instrument, two of them dropped asunder. All attempts to make them hold were ineffectual, and it had to be abandoned. Threads of strong, fine whipcord were at once carried along the same course as the chain had followed, and tied, both as single and double ligatures, with all the force that could be exerted.

At first the patient suffered very greatly; he could neither swallow nor talk. Nutritive enemata, containing acetate of morphia, according to circumstances, were given with great comfort and advantage. On the fourth day he was much improved. On October 10th, though the ligatures had cut so far into the base of the tongue that they could neither be seen nor felt, yet, as the organ was regaining a more natural appearance, a very strong ligature of silk whipcord was tied round the base as tightly as possible, and another cord carried through the fissure cut in the base round under the frænum so as to constrict the sublingual attachments, with the effect of apparently well and effectually strangulating the organ. He again improved so much as to require but little morphia, and was able to swallow liquid food with comparative facility, until the night of the 15th, when hæmorrhage to the extent of a pint of blood came on. Though this was arrested by a solution of permuriate of iron, it recurred frequently, and though in smaller quantities, and always at once checked by the solution of iron or tannic acid, he was so much reduced that it was determined on the 17th to place another ligature round the base of the tongue. This effectually arrested the bleeding for fifty-four hours, when it again returned so freely that ligatures were carried round both the base and under the frænum in the same manner as on the 10th. On this occasion, however, a new material (which was exhibited to the Society) was advantageously used. There was no more bleeding until the 23rd, when it again recurred to some extent three different times, and necessitated the reapplication of the ligature in both situations. Not the least pain was experienced on this occasion, showing the nerves had already been divided. There was no subsequent return of the hæmorrhage. On the 30th two other ligatures were applied, no pain whatever being caused in so doing. On November 2nd, as the tongue was still firmly attached, though apparently cut through at the base, a twisted double steel suture wire was carried round it under the frænum, and by means of a suitable apparatus twisted well home until it broke, without, however, cutting through the tissues. This plan was repeated on the 3rd with a much stronger wire (a strong pianoforte string), which also gave way before completely severing the connexions. A repeti-

tion of this on the 4th cut through the sublingual tissues, and the tongue was free. Neither pain nor the loss of any blood occurred in any of the last four or five operations. There was so little wound to heal that it was well the next day, proving that, as suspected, the base had been cut through for some few days. A mass of knotted thread and wire was removed on the following day, but two or three threads were so deeply imbedded and so fast that many days elapsed before the last was taken away. The knots were perfect, showing how great an amount of force had been exerted without complete strangulation being effected: proving also that, though the base of the tongue be completely cut through, the sublingual connexion alone is sufficient to maintain the vitality of the organ.

From this time the patient may be said to have been well. The next day he ate with great gusto a hearty dinner of roast duck. He rapidly improved in flesh and strength. The facility with which he can masticate and swallow is surprising; indeed, he says he can do so much better than for the two previous years. The deglutition of liquids, as might be supposed, is more impaired than that of solids. The sense of taste is enjoyed in a very considerable degree, while the power of articulation is great beyond all expectation. He can pronounce every letter of the alphabet, many of them perfectly (all the vowels), most of them distinctly. The three there is the most difficulty in are K, Q, and T, which are difficult and indistinct in the order they are named, K being much more so than T. In conversation, he can be easily understood, if not excited or hurried; if he be some words are indistinct, otherwise his power of articulation is sufficient for all purposes of intercourse, so much so that it is probable he will be appointed master of one of the smaller stations on the railway.

After referring to the danger which he believes must always be incurred by following the plan of extirpation practised by Professor Syme, which inflicts so great an amount of mischief not directly involved in the mere removal of the tongue, which itself is sufficiently serious, and to the pain, delay, and danger of hæmorrhage incurred by the use of thread ligatures, the author concludes by recommending in preference the écraseur, introduced by a submental opening made by the knife through all the tissues, which would not occasion much bleeding; and when, from any cause, this instrument is not employed, after a deep fissure has been made in the base of the tongue by a submental ligature, an earlier use of strong wire ligatures than was adopted in this case.

ART. 115.—*Fatal Hæmorrhage from Ulceration, produced apparently by the pressure of a Tracheotomy Tube.* By Dr. RUSSELL and Mr. BOLTON.

(*British Med. Journal*, April 6, 1861.)

CASE.—N. J—, æt. 25, was admitted into the Birmingham General Hospital, 22nd June, 1860, suffering from constitutional syphilis. Four months previously she had been salivated, and since this time her throat had been "very bad." She is emaciated, and of a very cachectic appearance. She breathes with great difficulty, and with marked laryngeal stridor. Her voice is feeble and nasal, but not hoarse. Swallowing is attended with considerable pain. On examining the throat, the uvula and a portion of the soft palate are found to be deficient; and an extensive ulceration covering the pillars of the fauces and the posterior surface of

the pharynx. Pulse 140. No marked interference with the arterialization of the blood. In the course of the evening, the dyspnœa becoming more urgent, tracheotomy was performed by Mr. Bolton, with immediate and marked relief. For the three days following, her state was most encouraging, sleeping and eating both being satisfactory. On the 27th, a troublesome cough coming on in the night, led to the temporary removal of the tube from the windpipe. On the 28th the tube was replaced. On the 29th the breathing was a little interfered with in consequence of the tube becoming clogged with mucus, but the ulcerated surface had a much more healthy aspect, and everything seemed going on well until the evening, when blood, at first flaccid and afterwards of a dark colour, began to escape from the tube, and in twenty minutes, or thereabouts, in spite of every effort to save the patient, death happened, with mixed symptoms of apnœa and sinking.

The post-mortem examination revealed a very extensive ulcer of the pharynx extending over the lateral and posterior aspect, and almost laying bare the cornua of the hyoid bone, the edges being sharp, with furrowing above and below. The epiglottis and aryteno-epiglottidean folds were firm and rigid, and enormously thickened, but not ulcerated. The vocal cords were perfectly healthy. The trachea was healthy, with this exception:—On its posterior face was an ulcer an inch long, and a quarter of an inch broad, with sharply cut and rather irregular edges, completely perforating the mucous membrane. This ulcer exactly corresponded to the back of the tube, and commenced one eighth of an inch below the wound. The mucous membrane surrounding it was injected. Its surface presented small granulations, but no blood adhered either to it or to the pharyngeal ulcer. The trachea contained fluid blood, especially in its lower portion; and both bronchi and their finest branches were loosely filled with soft coagula. There were no signs of pulmonary apoplexy, and the mucous membrane of the bronchi, and the lungs generally, appeared to be quite healthy. The heart was quite healthy: so were all the principal viscera. Hæmorrhage from the ulceration in the mucous membrane of the trachea, in the part where it was pressed upon by the tracheotomy-tube, had been the cause of death, and there was every reason to suppose that the ulceration had been produced by the pressure of the tube.

ART. 116.—*A new procedure for Tracheotomy.* By M. MAISONNEUVE.

(*Journ. de Méd. et Chir. Prat.*, Dec., 1861.)

The special instrument, which M. Maisonneuve proposes to use, he styles *the tracheotome*. It is a kind of incurvated needle, sharp on its concave side, with a *regulator* intended to limit the depth of its penetration. This instrument may be fixed in a handle like Deschamp's needle, and provided with a very simple mechanism, to keep the trachea open, as soon as the incision of the latter has been terminated.

The patient lying on his back, with his head moderately thrown back, the surgeon holds the tracheotome in his right hand and applying the point of the instrument to the middle of the crico-thyroidean space, gently inserts it in a perpendicular direction. A very evident sensation of resistance overcome indicates that the point has penetrated into the respiratory tube, at the same time that the regulator prevents it from entering too deeply. Then directing the point of the needle towards the sternum, he gently conveys it forward to the

trachea until the needle is entirely concealed in the flesh. During this operation, the regulator must be constantly in contact with the integument. When the requisite depth has been reached, the surgeon forces the point of the needle through the trachea and the integument, and divides from below upward all the soft parts included in the concavity of the sharp edge. This incision is naturally limited below the cricoid, by the perfect bluntness of the heel of the instrument. It is important, for the purpose of giving the incision all desirable perfection, to compress the integument upward with the left hand, at the moment the point of the needle extrudes from the trachea, and, in the movement of incision, to press, on the contrary, the tissues backward, in order to facilitate the section. The result of this procedure is that the incision of the integument is more extensive than that of the trachea, and therefore the blood flowing from the wound has less tendency to penetrate into the air-tubes.

Art. 117.—*On the Relief of Choking.* By Mr. Huxley.

(*Medical Times and Gazette*; and *Dublin Medical Press*, Feb. 12, 1862.)

Mr. Huxley's directions are these:—"Put the patient on his back; with one hand on the throat, raise the whole vocal apparatus towards the back of the mouth, and fix; put the forefinger of the other hand into the mouth, down to, and beyond, the epiglottis. If a foreign body is sticking in the rima, it can be felt and loosened, and raised by alternate pressures with the finger from side to side, and brought out of the mouth by the finger (hooked), either in one piece or in successive portions.

"If the patient is far gone when first attended, the operation is easier; the jaw is dropped, and there is no resistance. The hand outside, raising and supporting the whole larynx and trachea, gives resistance to the finger at work within. It is very easily done. The finger feels, and the probang does not. The former neither does mischief nor misses the object. Many years ago, in the presence of an emergency, this plan suggested itself. I have used no other since, and never found it fail. Amongst the insane, embracing paralytics, many have the power of deglutition enfeebled, and some are greedy feeders, or will steal and try to 'bolt' impracticable morsels. Choking is here an accident to be looked for, and formerly, before the introduction of mincing-machines, it was very common."

Art. 118.—*Two Cases of Œsophagotomy.* By Mr. Syme, Professor of Clinical Surgery in the University of Edinburgh.

(*British Med. Journal*, Aug. 24, 1861, and March 22, 1862.)

Case 1.—M. C—, æt. 45, was admitted into the hospital on the 22nd July, 1861. She stated that six days before the time of her application, while eating mutton broth, she had suddenly felt inability to swallow, together with severe pain, from which she concluded that a piece of bone had stuck

in her throat. Under this impression, she had applied for assistance, and been treated by the introduction of probangs or other instruments, without success, so that her distress remained unrelieved, and became complicated with fits of dyspnœa, which repeatedly threatened to prove fatal. On examination, I found her in the state described, with a very anxious expression of countenance, and slight general fulness of the neck, which was not discoloured or otherwise altered, but felt somewhat tender under pressure. Having introduced the long curved forceps, without being able to touch the foreign body, but feeling satisfied, from the circumstances just mentioned, that there was one present; and fearing that, if allowed to remain, it would cause suppuration, if, indeed, it had not already done so, I considered it necessary to adopt the only effectual mode of affording relief, by performing the operation of œsophagotomy.

With this view, having administered chloroform, I made an incision as if for ligature of the carotid artery, exposed the edges of the sterno-mastoid and sterno-thyroid muscles, and then opened the deep fascia of the neck, from under which a small quantity of purulent matter escaped. Introducing my finger through the narrow passage thus detected, I carried it upwards and backwards to the posterior part of the gullet, where a piece of bone was felt protruding from the canal. The requisite dilatation having been made, I guided in a pair of polypus forceps, and extracted a piece of mutton bone, extremely thin, but nearly an inch square.

The operation was performed on a Thursday, and on Friday the patient seemed to be doing well; but on Sunday I was told that she had become delirious on Saturday, and appeared to be sinking. Upon visiting her, I found the hands blue and perfectly cold, with the faintest possible thrill instead of a pulse, so that the case had certainly a most hopeless aspect. It occurred to me, however, that the symptoms might possibly proceed from hunger, as the patient, during the whole week, had not been able to swallow at all, and since the bone had been removed had done so very imperfectly, from the milk and other fluids given to her escaping in great part by the wound; I therefore, by means of a catheter, introduced from the mouth into the œsophagus, immediately injected some beef-tea, with wine. In the course of half an hour, there was, in all respects, a decided improvement, which, through a continued employment of the same means, repeated regularly at proper intervals, gradually increased, until recovery was completed at the end of a fortnight.

Case 2.—W. H—, æt. 21, the son of respectable parents in Gottenburgh, come over from Sweden to study agriculture under the direction of a farmer in the east of Fife. While there, in the beginning of November last, he happened to amuse himself by throwing up a piece of copper money, and catching it in his mouth. But, upon one occasion of doing so, his head being bent very far back, and his mouth widely expanded, the coin descended directly into his throat, and was swallowed without any effort, indeed, consciousness of the act. He then felt that the foreign body had not gone down into the stomach, but was arrested at the lower part of his neck, were it caused an uneasy sensation, and impeded the passage of food. In these circumstances, he was brought to Edinburgh, and placed under my care.

Finding that the coin (whether a penny or halfpenny, the patient could not say with certainty) was beyond the reach of forceps, and having a great dread of the disastrous effects which are apt to be produced by attempting to overcome, through forcible pressure, the resistance depending upon the form and consistence of an obstructing body in this situation, I

resolved to abstain from interference, in the hope that, the narrow part of the gullet having been passed, descent into the stomach might be gradually accomplished. From the diminution of uneasiness, and increase in the facility of swallowing which took place during the subsequent fortnight, it seemed as if this expectation had been realized; and I, therefore, then advised the patient to return home.

Towards the end of February, being informed that the young man still continued to complain, I requested another opportunity of examining him; and upon seeing his perfectly healthy aspect, felt so sure the passage was free, that I did not hesitate to introduce a thick flexible bougie, which, greatly to my surprise, distinctly struck upon some hard substance opposite the upper end of the sternum. Considering the serious consequences that might attend ulceration of the œsophagus at this part, and the risk of such an occurrence happening at any time, even after the long interval which had fortunately elapsed in safety since the accident, I had no hesitation in resorting at once to the operation, and, with this view, gave the patient a private room in the hospital, where he might have the advantage of careful attendance.

On the 25th of February, chloroform having been administered, so as to produce its full effect, I made an incision from the sternum upwards between the sterno-mastoid and sterno-hyoid muscles, divided the deep fascia, and dissected downwards, until my finger felt the vertebræ in the tracheal side of the carotid artery, just below the crossing of the omo-hyoid. There being then no trace of the foreign body, and as I feared to search for it by exposing the œsophagus lower down, which would have endangered the great vessels at that part, an ivory ball-probang was introduced into the tube, so as to distend and act as a guide for cutting through its coats. Having done this, and withdrawn the instrument, I introduced my finger into the opening, directed it downwards until the piece of money was felt, and then, by means of slightly curved forceps, readily effected its extraction. It looked like one of George the Third's pennies somewhat attenuated in thickness; but, upon more careful inspection, it proved to be a Swedish coin of the same value. No bad consequence followed the operation. The patient was supplied with milk and beef-tea from time to time, by means of a catheter introduced by the mouth. At the end of a week, he regained the power of swallowing without any discharge from the wound; and in the course of ten days more, was quite convalescent, without experiencing any inconvenience whatever from the serious jeopardy through which he had passed.

The most interesting and instructive point of this case seems to be the long retention of such a body without causing ulceration of the mucous membrane upon which it rested. When a metallic instrument presses against a surface of this kind, it is certain to produce such an effect, as may be learned from the result of tying a silver catheter too far into the bladder, or keeping a tube permanently introduced through the œsophagus at the narrow part where it lies between the larynx and vertebræ. The absence of ulceration in any such case is, therefore, a proof that no pressure had been sustained; and hence the explanation of those curious discoveries which are not unfrequently made when a moletrap-looking machine is extracted or discharged from the female pelvis, after remaining there even for many months, through forgetfulness of its having been introduced under the pretext of altering the attitude of an uterus, alleged to be improperly reclining backwards or nodding forwards. But it is evident that, if this contrivance really did overcome resistance, it must cause pressure, and

thereby give rise to ulceration; so that the safety of the means in question, so far as they are safe, depends on their inefficiency, whatever may be said or believed to the contrary by unscrupulous specialists and credulous women.

ART. 119.—*A case in which Artificial Teeth were lodged between the Tongue and Epiglottis.* By Mr. PAGET, Surgeon to St. Bartholomew's Hospital.

(*Medical Times and Gazette*, Jan. 18, 1862.)

The following case seems worthy to be added to the records of foreign bodies found in places where they were least likely to be, and producing symptoms very similar to those of organic disease:

CASE.—In July, a gentleman, æt. 60, after being engaged all day in more than usually fatiguing business, and exposed to cold air, felt faint and ill in the evening, and went to his bedroom at the hotel in which he was staying. While lying down faint, or, perhaps, in the beginning of a slight epileptic seizure, he asked the servant to take out for him his artificial teeth—nearly complete separate sets for the upper and lower jaws. The servant, he believed took them out. Of what immediately followed he could remember nothing more than that he became much more ill, with difficulty of breathing, and a sense of choking and suffocation, in which, in great anxiety and alarm he sent for medical help. He was found suffering with much difficulty of swallowing and some dyspnœa. His tonsils appeared much enlarged and unusually red. These symptoms were treated, and in some measure relieved; and when one set of his teeth was missed on the day after the beginning of his illness, his medical attendants, who suspected that they might have been swallowed, were begged not to speak of them to him, for fear of the excitement and alarm that such a suspicion might excite in him. All the severity of his symptoms being subdued in a few days, the patient returned to his house at Rhyl, where Mr. Theed, as usual, attended him. For the first few days, Mr. Theed saw appearances of slight inflammation of the fauces, but these soon subsided: from that time nothing morbid could be seen in his throat. He had considerable and increasing difficulty of swallowing, was obliged to drink very slowly, and to cut all his solid food into very small fragments, and force them down his throat with gulping. Occasionally he was almost choked by food becoming involved in a tenacious mucus, which appeared to be secreted in large quantity at and beyond the fauces. Occasionally, also, he vomited after taking food. He had frequent short "hacking" cough; and once or twice hawked up a little blood. He suffered no considerable pain; but felt constriction about his cricoid cartilage, and always referred to that place as the seat of obstruction hindering his swallowing. His voice was rough and rather hissing; his breathing sometimes with wheezing.

Many times, while watching those symptoms, Mr. Theed suspected that they were due to some foreign body in or near the larynx, but he could see none; and the patient, as often as inquiries were directed to this point, declared somewhat impatiently that the thing could not be. Especially when with the tardily given permission of his relatives, he was asked if the false teeth which he had lost on the night of his illness, might not have slipped into his throat, he maintained that it was quite impossible; for what he had lost was a whole upper set, which, he believed, had been

unluckily thrown away with the water into which they were put at night. The piece was far too big, he said, to go into his throat, or to be there without his knowing it. However, as none of his symptoms diminished, and he was becoming very thin and feeble, Mr. Theed, in November, brought him to London for consultation. His feeble appearance, his dull pale face, his emaciation, and the recital of his case, made me fully expect that he had cancerous stricture of the upper part of his œsophagus. On examining his mouth and fauces I could see nothing unnatural, till, on extremely depressing the back of the tongue, I saw something white near his epiglottis—but too obscurely to guess what it was. Passing my finger to the side of the epiglottis, I felt teeth there, and soon hooked out the whole lost set, of which, with their gold palate-plate, and other fittings, the adjoining sketch will tell very well the size and other characters.



The piece lay between the base of the tongue and the epiglottis, very closely fitted to all the surface on which it rested. The teeth were directed upwards, and I believe the incisor teeth were next to the epiglottis, and the notch in the palate-plate next to the root of the tongue.

The most remarkable point of this case, next to the fact of the patient being unconscious for more than three months of what he had in his fauces, is that a thing so large as that which the sketch shows could be out of sight at the root of the tongue. It may be well, therefore, to repeat that it was completely invisible, except when the base of the tongue was exceedingly depressed, and even then only a small part of it was obscurely seen. To this, and to the patient's dread of any other examination than that with the eye, it must be ascribed that the lost teeth were not discovered long before I saw him.

It may be worth notice, that the patient referred to the parts about the cricoid cartilage, as the place of obstruction in swallowing. This may be an instance of transference of morbid sensation, similar to that by which the irritation that excites coughing, wherever its true seat may be, is felt as if it were at the top of the larynx. A similar deceptive transference of sensation was observed in a lady whom I saw with what I supposed to be cancerous stricture of the upper boundary of the œsophagus. She always pointed to the cricoid cartilage as the place of obstruction: but her disease proved to be a cancerous ulcer of the tongue immediately in front of the epiglottis, and her pharynx and œsophagus were healthy.

Since the removal of the displaced teeth the patient has regained health,

and Mr. Theed's last report of him is "I think him as well as before" the accident.

P.S.—Since this narrative was in print, Mr. Theed has written that the patient has had "a very severe attack of epilepsy, which lasted for five or six hours, during which time the convulsions were so violent that if I had not removed (though with great difficulty) his *full* set of teeth, he would inevitably have broken them into pieces. This, I think, elucidates the previous mystery."

ART. 120.—*A case of Polypoid Growth of the Larynx diagnosed and removed by aid of the laryngoscope.* By Dr. THOS. J. WALKER, Peterborough.

(*Lancet*, Nov. 9, 1861.)

This case is calculated, in an especial manner, to show forth the utility and necessity of the laryngoscope.

CASE.—Richard P——, æt. 14, formerly a worker in the sheds of the Great Northern Railway Company, Peterborough, first seen by me on the 12th of August, 1861; presents an anxious aspect; face pale, and bathed with perspiration; lips livid; pupils somewhat contracted; hands cold; he respires with the greatest difficulty, all the accessory muscles being thrown into violent action, and each inspiratory act being accompanied by a loud laryngeal murmur; the least draught of wind blowing on the face stops the breathing, and causes the greatest distress; the pulse is very rapid and small; the whole appearance such that, before going into the history of the case, I got the tracheotomy-tube in readiness for an emergency. On inquiry, I learned that for eight or nine years the boy has been very hoarse, never during the last six years speaking above a whisper. His breath has been rather short for about the same period. For about eighteen months he has been quite disabled from doing any hard work, on account of the distressed breathing induced by exertion; gave up work altogether about six months ago, and for three months has been unable to move across the room or exert himself in the least. When he sleeps, he makes so much noise in breathing, that he is heard in the neighbouring cottages. His appetite is good, but he becomes daily weaker and weaker. He is of a strumous family, and presents cicatrices from strumous sores about the neck. He has been treated at various intervals by different medical men. For about a week he has seemed in the same imminent danger as to-day. A laryngoscopic examination at once reveals the source of the dyspnœa. The epiglottis and upper part of the larynx are normal, with the exception of slight œdema of the aryteno-epiglottidean folds; but growing from the anterior wall of the larynx, immediate above the anterior attachment of the right vocal cord, is a polypoid growth, presenting an irregular mulberry surface, which, being about the size of the tip of the little finger, and some ten lines long, acts as a valve. At each inspiration, it is seen drawn down on to the rima glottidis, which it would completely close, were it not that the end of the growth is drawn slightly through the rima, so as to leave a small chink at the back of the rima through which air can enter. In expiration the growth is thrown upwards, so that the exit of the air is not impeded. At the base of this polyp, and occupying a similar position on the left side, is a small growth, similar in character, and about the size of a split pea.

The nature of the case being thus disclosed, I at once decided on endeavouring to relieve my patient without resorting to tracheotomy; and urgent as the case seemed, it appeared to me that the risk of delay was preferable to the risk of opening the trachea. Accordingly, I simply directed certain precautions to be taken as to position, avoiding agitation, &c.; and wrote to Messrs. Weiss for an instrument which I conceived might be effectual to remove the tumour.

Aug. 14th.—Death by suffocation having threatened once or twice during the last two days, I felt it necessary to adopt some palliative measure while the instrument ordered was preparing. Accordingly, this morning, the tube belonging to Störk's cauterizator was passed through the rima into the trachea. I was surprised, however, to find that, when it was introduced, respiration seemed impossible. On removing it, I found the cause of this to be that the end of the polyp had caught in the fenestra of the tube, and completely obstructed it, a portion about the size of a pea having become fixed, and been torn off in introducing the tube, and coming away in the fenestra when it was removed.

This unexpected consequence of the introduction of the tube was fortunate on two accounts. In the first place, although the portion of the tumour removed was so small that I could scarcely perceive any difference in the size of the opening at the back of the rima, the breathing of the patient was certainly somewhat better, and his lips assumed a brighter tinge. Secondly, the friable nature of the tumour being demonstrated, I felt satisfied that if a silver wire was passed round the base of the growth and drawn tight, it would crush through it and allow of its removal. I accordingly procured from Messrs. Weiss a silver canula, much resembling Gooch's double canula, but longer and curved at one end almost at right angles. Passing a piece of thin iron-wire through the tube, and returning it so as to leave a loop, we have an écraseur capable of removing most fibro-cellular growths in which the latter element predominates.

78th.—The patient declares himself much better since the removal of the small portion of the tumour by the canula. His mother says, "he is like the dead come to life." Placing the patient in a good light, and having the loop at the end of the canula about large enough to let a fourpenny-piece slip through, I, by watching the movements of the instrument in the laryngoscope, was able several times to pass the loop down to the rima without touching any other part of the larynx; but the moment that I touched the parts here, in endeavouring to slip the noose over the polypus, retching was caused, and consequently the endeavour to catch the tumour failed, all the parts of course disappearing out of sight. Three times, however, I succeeded in catching the polyp, and each time I removed a portion as large as a small pea, giving immediate relief to the patient; and as the throat was becoming irritable, I did not endeavour to do more. After the removal of the first of these portions the patient's appearance improved, and, at the end of the sitting, he was able to walk with support some little distance towards his own home, having been unable for three months previous to the removal of the first portion of the polyp by the canula to move even across the room.

19th.—On calling upon the patient to-day, I found that he was out walking a quarter of a mile from his own home, still voiceless, but breathing without any laryngeal noise. Laryngoscopic examination shows that the larger growth is sliced off almost on a level with the lesser one, leaving the whole of the posterior part of the rima quite free for respiration. The tumour is covered by purulent-looking discharge. I to-day failed altogether

in including in the noose of my écraseur any part of the tumour, the whole of the pendulous portion having been removed, and the wide base alone remaining. In place of the single iron wire, which I thought rather too flexible, I used to-day—on the suggestion of my father, Dr. Walker, with whom I have had the benefit of consultation in the management of the case throughout—a loop made of two wires twisted carefully together, which, while it draws almost equally well with the single wire, possesses just the requisite amount of rigidity.

22nd.—Patient continues to improve greatly in his general health; pulse more powerful; appetite good; cheeks assuming a little colour. Walks to and from his home, half a mile off, with ease. Cod-liver oil ordered.

24th.—Laryngoscopic examination the same as on the 19th, except that there is now no discharge on the base of the tumour.

26th.—Solid nitrate of silver applied to the remains of the growth.

30th.—Reapplication of nitrate of silver.

The patient's health is so much improved that he wishes to go to work. He is to do so, coming up occasionally to have the larynx examined and the caustic applied. It is uncertain how far the relief given by the operation may be permanent, but should the growth return I have no doubt that, with the experience gleaned in the treatment of this case, I should be able to remove it more completely at one operation than I did this time; in the meanwhile, I think there is reason to hope that, as the patient's health improves at the same time that the lunar caustic is frequently applied to the site of the disease, a complete cure may be effected. At present the patient is as well as he can ever remember to have been, and is able to work almost as well as other boys of his age.

Oct. 20th.—Since the above was written I have seen but little of my patient, as he has been working extra time—that is, from six in the morning until half-past eight in the evening; he is still, however, very hoarse, and wheezes after any great exertion.

ART. 121.—*On the treatment of Goître with the Biniodide of Mercury Ointment.* By Mr. A. M. GREENHOW, Brevet-Surgeon in H. M. Indian Army.

(*Medical Times and Gazette*, Nov. 30, 1861.)

Mr. Greenhow's chief object in writing is to urge a trial of the biniodide of mercury ointment in western countries, where goître prevails. Mr. Greenhow writes from Segowlee, in India, and the additional evidence which he furnishes is strongly confirmatory of that which was furnished previously. He says:—

"Since I came here in November, 1860, I have felt it a pleasure to carry out, as far as my limited means would allow, the biniodide of mercury treatment of goître among the poor people of the district; and, having no dispensary or other funds, I have followed the plan of causing the native doctor of my regiment (the 3rd Sikh Irregular Cavalry) to apply the ointment to all who chose to pay two pice (about a halfpenny) for it, this small sum having been found by Major Holmes sufficient to cover the expense of the medicine. During the last six cold months, more than 1500 people have been treated at Segowlee, and with the greatest success. Some cases required a second or even third application of the ointment, and very few proved incurable. I

may mention that I used a stronger ointment than was prescribed by Major Holmes or Captain Cunningham; for, to 3 lbs. of lard or fat, 12 drachms of biniodide of mercury were added. After this ointment was smeared over the goître, the patient sat in the sun with his neck well exposed. The effect was apparent in an hour or two, for a blister rose; but in the course of a week or ten days this healed, and left the tumours, if not completely cured, at least very greatly diminished. The people willingly paid their money, and, indeed, were willing to do so; but since the hot weather set in, they have nearly ceased to attend.

"My friend, Dr. Coates, Civil-Surgeon of Moteeharee, has kindly given me the result of his dispensary practice during the last six cold months. It seems he had a total of 13,067 cases, of which 7677 have been cured, 3318 relieved, 768 have not benefited, or have been found incurable, 937 have ceased to attend, and 367 are still under treatment. These results are very satisfactory, and prove the immense benefits to be derived from the use of the biniodide ointment. The remedy has, indeed, a wide-spread reputation in these districts, and is considered a certain cure. That being so, the question arises whether it might not be introduced into western countries; into Europe and America, into the valleys of Switzerland, the hills of Derbyshire, the valleys of the Ohio and the Mississippi. There is not, it is true, in all these countries, the same powerful sun which in India helps us so in the action of this remedy; but where the sun is absent, it would be well to try whether a roasting fire would not supply its place, and raise the required blister."

ART. 122.—*Case in which the Thyroid Gland was removed successfully.* By Dr. Voss.

(*American Med. Times*, Jan. 1, 1862.)

At a meeting of the New York Pathological Society, Dr. Voss exhibited the diseased mass which he had removed from this case, and related the following particulars:

CASE.—The patient was a lady, æt. 54. At the age of twelve, she first noticed an unnatural fulness of the throat, which gradually became more marked and defined up to the time of the operation. No reason could be found for the appearance of the growth, either so far as hereditary, endemic, or any other influences were concerned. During the whole of her menstrual life, which extended from her sixteenth to her forty-eighth year, she had always suffered from dysmenorrhœa, and was in consequence childless. At different periods of the existence of the tumour various forms of medication were resorted to, but the only effect was a slight diminution in its size. Within the last seven years the tumour, having attained quite a large size, occasioned her a great deal of difficulty in swallowing and breathing, so much so that towards the last she was unable to lie down. While in Germany she applied to have the tumour removed, but the operation was denied to her. At that time she was directed to take iodine, which she did until iodism was induced. Her sufferings from the presence of the tumour at last became so aggravated that she earnestly

requested its removal. The size of the tumour before the operation was equal to that of a clenched fist; it was flattened antero-posteriorly. It was situated more to the left than the right, and consequently pushed the trachea to the right side. On palpation neither fluctuation nor pulsation could be felt. When standing erect the head could be moved very well from side to side, but the slightest motion backwards occasioned her distressing dyspnœa. The difficulties in the removal were comparatively small. A long incision was made from the upper part of the thyroid cartilage down to the manubrium of the sternum. As one part of the mass on the left side reached somewhat behind the sternum, the detachment of the tumour was commenced on the outer surface, and the vessels which came from the lower right side were secured. There was comparatively a small amount of venous hæmorrhage in this step of the operation, but when the left side of the tumour was reached the venous flow was very profuse and unmanageable until, the mass being detached as far as possible, the chain of the écraseur was placed around it, and the whole removed. The resulting wound was perfectly dry. The patient progressed remarkably well since the operation, the pulse at no time during the last two weeks exceeding ninety beats per minute. The tumour on microscopic examination being proved to be non-malignant in character, and composed of fibroid, colloid, and vascular tissue.

(B) CONCERNING THE TRUNK, ABDOMEN, AND PELVIS.

ART. 123.—*A Case of Hydrorachis successfully treated by injecting tincture of iodine.* By M. SEZERIE, of St. Barthelemy, Lot-et-Garonne.

(*Gaz. Héb. de Méd. et Chir.*, Nov. 30, 1861.)

CASE.—The patient was an infant aged nine months and a half, affected with paraplegia and incomplete paralysis of the superior extremities. The swelling, of the size of an orange, occupied the lower part of the lumbar region, shrunk on pressure, and had twice opened spontaneously. On the 12th of March, 1859, M. Sézerie removed with a hydrocele trochar about one ounce of lemon-coloured fluid, and while an assistant compressed the base of the tumour, injected one ounce of a mixture of equal parts of water and tincture of iodine. The solution was permitted to remain three minutes within the cavity, and then allowed to escape. The tumefaction did not return, the incomplete paralysis of the arms soon yielded, the paraplegia gradually decreased, and now, more than two years after the operation, the child can walk and run, no trace of the disease remaining but incontinence of urine.

ART. 124.—*Case of Rupture of the Heart from external violence, without rupture of the skin.* By DR. JOHN D. WARD.

(*Medical Times and Gazette*, Jan. 18, 1862.)

CASE.—In the month of November, 1861, I was hastily summoned to a man, aged twenty-six years, whom my informant stated, had shot himself with a pistol. On my arrival I found him extended upon a couch, dead, he having lived about ten minutes after the fatal shot was heard.

When first seen, his shirt was on fire from the close proximity of the weapon when discharged, and his flannel vest was perforated. No external marks of violence were visible, except a slight mark on the skin beneath the left nipple, corresponding exactly with the opening in the vest. The mark was undoubtedly caused by the loop-end of a pistol-key, used for taking the firearm to pieces, which was picked up, along with the pistol, immediately after the report was heard. The hollow part or barrel of the key was partially filled with charred paper.

Two days afterwards, I was requested by the coroner to make a post-mortem examination, which revealed the following singular facts:—The features presented an unusually pale, even blanched appearance; but besides this and the mark on the chest already alluded to, there was nothing else of a remarkable character. On reflecting the integuments, the intercostal muscles between the fifth and sixth ribs, on the left side, and underneath the external mark, were found to be perforated sufficiently to admit the finger; and, on removing the sternum, the pericardium was found quite intact, but unusually distended. On cutting into the pericardial cavity, a considerable quantity of coagula and serum issued forth. The heart was next carefully examined, and the left ventricle was discovered to be ruptured longitudinally, to the extent of an inch on its anterior surface; in size, texture, and condition, the heart was perfectly healthy.

It is remarkable that the skin was not perforated, no rib broken, the pericardium entire, and yet the intercostal muscles and left ventricle were perforated. The burning of the clothes, to a considerable extent, shows that the pistol was held close to the chest; and that what is technically called "windage" must have been considerable. In such case, the injury may be supposed to have been caused by a spent projectile. I am not aware that there is a parallel case on record. Many points of interest will occur to the students of forensic and military surgery; but I shall at present content myself with the above simple narration, only just pointing out, however, that, though various records show that rupture of the heart takes place in the right ventricle almost three times as often as in the left, yet in this case the healthy structure of the left ventricle succumbed to the force.

Art. 125.—*On Intestinal Obstruction by the Solitary Band.* By Mr. John Gay, Surgeon to the Great Northern Hospital, &c.

(*Trans. of the Medical Society of London*, 1862.)

The practical conclusion at which Mr. Gay arrives in this very practical memoir is this—That our present means of diagnosing internal obstruction by bands are imperfect; and that, consequently, many cases will escape the most careful scrutiny to ascertain their cause. On the other hand, the inductions from the cases which he has collected and examined, encourage and even authorise the surgeon, in a case presenting a certain combination of features or evidence, in other words, in a well marked case, rather to explore the abdominal cavity, than to allow the patient to sink without the chance that such a procedure might afford. These evidences should be:

1. An antecedent abdominal affection, of such severity as to lead the surgeon to believe that it might have been attended with

ART. 127.—*On the expediency of operation in Strangulated Umbilical Hernia.* By M. HUGUIER, and others.

(*Medical Circular*, Mar. 5, 1862.)

The Society of Surgery of Paris has recently devoted several meetings to a discussion on this subject. The question was brought forward by M. Huguier, being suggested by the case of a woman, aged sixty-nine, in whom an umbilical hernia of long standing, became incarcerated, in consequence of the development of an organic cyst. MM. Huguier and Gosselin, aware of the inefficacy of surgical interposition under these circumstances, allowed matters to take their course; gangrene of the intestine supervened, an artificial anus followed, but life was preserved, at the cost, it is true, of a distressing infirmity.

M. Goyrand, of Aix, was of opinion that here an operation would have been appropriate, and he adduced in support of this view, three instances of umbilical hernia, in which the use of the knife was crowned with success. These exceptionally fortunate cases did not, however, modify M. Huguier's convictions, and could scarcely be expected to do so. All the operations of the kind performed in M. Huguier's presence by Dupuytren, Richerand, and Gerdy, terminated fatally. M. Gosselin operated upon four women, and the event in all cases was unfavourable. In a similar number of instances of exomphalos, M. Démarquay was equally unfortunate. MM. Guersant, Giraldès, and Deguise, have each performed two operations, which failed in preserving life. MM. Bauchet and Morel-Lavallée, each witnessed an operation, and in each death was the result. M. Nélaton can adduce but one successful case in his own practice; and, alluding to it in a recent lecture, he stated that no living surgeon, excepting perhaps M. Goyrand, had met with better fortune.

We need not expatiate on the anatomical conditions which account for the greater intensity of the symptoms, and the excessive peril of the operation in strangulated umbilical hernia. We merely acknowledge the fact, and, in our opinion, the surgeon is fully justified in refraining from active interference, especially as cases have been adduced by MM. Broca. Boinet, and Verneuil, in which a cure was effected by the unaided efforts of nature. Among others, M. Verneuil related three instances, which he witnessed within the last month, and in which, although strangulation was distinctly present, he carefully abstained from any attempt at reduction. He prescribed leeches, poultices, aperient enemas, abstinence from fluids, and an appropriate supporting bandage; baths were likewise resorted to, and the symptoms yielded in a period varying from one to seven days.

Hence, under the circumstances alluded to, the operation should be viewed as a last resource, for, of all the members of the Society of Surgery, who took a share in the debate, M. Richet alone expressed himself favourably to surgical interference. His opinion, however, seems to rest on weak foundations, for, in one of the cases he adduced in support of his argument, death took place, and the other was an instance of unusually small exomphalos, the only variety, said M.

Huguier, in which the operation might present some slight chances of success.

ART. 128.—*Unusual course of an Inguinal Hernia.* By M. FANO.

(*L'Union Médicale*, Dec. 5, 1861; and *British Medical Journal*, March 8, 1862.)

It very rarely occurs that an inguinal hernia, after escaping from the external abdominal ring, mounts between the abdominal aponeurosis and the skin of the iliac region, leaving the scrotum entirely free. Dr. Fano records a case in which the hernia took such a course. M. G—, æt. 67, had had from his childhood inguinal hernia on the left side, which he kept up by an imperfect bandage. On June 15th, while he was making violent efforts at defæcation, the hernia became larger and more painful; he, however, immediately afterwards took a long walk, and returned home in a state of great suffering. M. Fano, being called in by M. Grammaire, found, in the left iliac region, a swelling extending from the spine of the os pubis to the crest of the ilium; it was parallel to Poupart's ligament, nearly cylindrical, and of about the size of two fists. It was soft, resistant, elastic, and fluctuated freely at every point at which it was examined. No testicle nor spermatic cord could be felt in the left scrotum; and the patient said that the testis had never descended on that side. The abdomen was neither tense nor tender; the patient had had an evacuation some hours previously. He had no nausea, but felt an undefined kind of pain in the right side of the abdomen. As there were no urgent symptoms of strangulation, and there was the possibility of the presence of a hydrocele in the hernial sac, M. Fano decided to apply leeches and poultices to the swelling; and, if this produced no good result, to cut carefully through the coverings of the tumour, and, on reaching the sac, to puncture it with a bistoury; carrying the operation no further if there were merely a hydrocele, but extending it if a hernia were found to be also present. The next morning, as there was no improvement, it was determined to operate at once. An incision nearly five inches long was made through the skin alone over the middle of the swelling, parallel to its greatest diameter. The cellular tissue being carefully divided, the sac was reached; it was of a bluish colour. M. Fano punctured it with a bistoury, and a quantity of yellow fluid escaped; the last portion contained some blood. The swelling diminished somewhat, but not altogether. M. Fano now enlarged the incision carefully in both directions by means of a pair of scissors, and found a loop of intestine, with a portion of epiploon behind it. The testicle was found adherent to the sac at its lower and front part, quite near the femoral arch. On introducing the index finger to the internal part of the sac, M. Fano felt the external orifice of the inguinal canal. The contents of the hernia being held aside, the internal pillar of the abdominal ring was incised; the intestine, which was of a brownish colour, was replaced in the abdomen; but the epiploon, which was very hard, was left in the wound. Some suppuration followed in the course of the patient's convalescence, and required incisions; but he went on well, and had recovered by the end of September.

ART. 129.—*Case of Femoral Hernia, in which the gall bladder was contained in the sac.* By Mr. SKEY.

(*Medical Times and Gazette*, March 22, 1862.)

CASE.—M.R.—, æt. 55, was admitted on March 6th into St. Bartholomew's Hospital, under Mr. Skey, suffering from strangulated femoral hernia on the right side. She had been ruptured some years, and had worn a truss. Strangulation occurred on March 3rd, since which day there had been no action of the bowels, and pain, which was at first confined to the right groin, had extended over a considerable portion of the abdomen, and had increased each day in severity. She complained of feeling sick, but no actual vomiting had occurred. Upon examining the right groin there was found a very firm, distinctly defined, irregular tumour, about the size of a large chestnut, yielding an obscure impulse upon coughing. The abdomen was distended, and slightly tympanitic and intolerant of pressure, especially over the right iliac fossa. After a very moderate trial of the taxis, Mr. Skey proceeded to operation. The tumour when exposed had a peculiar appearance. It was irregular, and indistinctly lobulated on the surface, very firm, and attached by a tightly constricted base. At first sight, it might almost have been mistaken for an enlarged and indurated femoral gland. The wall of the sac was much thickened and consolidated. The contents were a piece of omentum which had long become adherent, and what appeared at the time a knuckle of small intestine, about as big as a small walnut, dark-coloured from congestion, and closely adherent to the interior of the sac. After breaking down the adhesions, and dividing the stricture, Mr. Skey remarked that the state of things was not satisfactory, for the intestine (as was then thought) still remained doubled sharply on itself, and did not unfold so as to restore the patency of the canal. As, however, the part had suffered considerably, it was thought advisable not to prolong the examination, and it was returned into the abdominal cavity. During the interval between the operation and death, which took place on the eighth day, there was considerable abdominal pain, chiefly on the right side, with some tympanitis; sickness was occasionally very violent; no action of the bowels occurred, although several stimulating injections were administered.

Autopsy.—The thoracic walls were noticed to be very much pressed in, as if from tight lacing. On opening the abdominal cavity, the peritoneum was found deeply congested, and the apposed surfaces of the intestine were glued together by recently effused lymph. The liver was much elongated, extending far down into the iliac fossa. The gall-bladder was distended, and reached about an inch and a half below the margin of the liver. Its apex, which had contracted a recent adhesion with the abdominal wall, immediately on the outer border of the femoral ring, bore distinct evidence of constriction. Around almost its entire circumference, about an inch from its tip, was a line of ulceration which had extended through the serous covering; this ulceration was most extensive on the inner side, where it must have been in contact with Gimbernat's ligament. The whole intestinal canal was most carefully examined, and no marks of stricture could be discovered.

Art. 130.—*Cystotomy without a Stone.* By Mr. T. Paget, Surgeon to the Leicester Infirmary.

(*British Med. Journal*, Dec. 14, 1861.)

Case.—The case was received at the Leicester Infirmary, by Mr. Marriott, the house-surgeon, and entered as, "September 24, James Branson, aged three years eight months; symptoms of stone. Examined twice by Mr. Marriott, and stone found the second time." Not, however, as he told me when reporting the case, with sufficient distinctness to settle his mind for an operation.

The history given by the father and the woman who had had care of the child since its mother's death, two years ago, was that it had violent pain in micturition, losing much rest by frequent calls, attended by sudden stoppages of the stream, and the making of a larger quantity immediately after, violent squealing, pulling of the parts, and forcing of fæces. Around the anus were several livid lumps of hæmorrhoids. There had been no hæmaturia. It was reported that no urine ever passed, except while in a sitting posture. The child was healthy looking.

Sept. 26. The child having been prepared for the operation by having had the bowels emptied yesterday, and an opiate enema this morning, the sound was introduced, and an indication of stone immediately given; but the click, though audible, was not sufficiently clear to encourage an incision.

After repeated attempts, the sound was producible at will, but did not impress all equally as being the click of an uncovered stone. Mr. Benfield and Mr. Marriott thought it certainly not sufficiently clear; Mr. Brown of Wymeswold was more satisfied; none of us, I believe, were free from doubt.

In this dilemma, I was influenced by the character and intensity of the symptoms, the hopefulness of permanent good if there were a stone, the rare occurrence of death with us after lithotomy, especially in children, and with Allarton's operation: and, after much hesitation, I decided upon opening the bladder at the risk, as I thought, of finding a stone impacted in the end of the ureter, and not being able to remove it.

I chose Allarton's operation, introducing a director along the groove of the staff, and using my little finger between the two as a dilator. In this way, the dilatation was readily effected; the finger entered the bladder, and the staff was removed. A nasal forceps was then passed over the director, but no stone could be found. Frequent attempts with various forceps were made; and once, when passing a large pair in the hope of stretching open the ureter, and dislodging a calculus from its end, I found that the lax cellular membrane between the rectum and bladder had given way, and the forceps were admitted into the recto-vesical pouch. This, however, was soon perceived, and the forceps were passed into the bladder.

The movements of the forceps imparted a feeling of slight grating, or rather vibration; but no click could be heard, and the grating was only that often produced by steel instruments rubbing over cut muscular fibres.

The examination and operation occupied a long time; but the least possible effect of chloroform was maintained, sufficient to keep down manifestation of pain. Very little blood was lost.

6 P.M. He had slept nearly continuously, but had spoken rationally. Urine passed by the wound freely, and only slightly tinged.

10 P.M. The urine was untinged. He had vomited once or twice.

Sept. 27., 9 A.M. He was perfectly conscious, and winced at pressure on the hypogastrium. Pulse rapid and small.

11 A.M. There was still considerable stupor, and he had again vomited. He winced still. Pulse rapid; skin hot; urine abundant and untinged. Foveatur abdomen.

7 P.M. He was suddenly convulsed, both arms especially; the thumbs were turned into the palms; the fingers tightly clenched; the pupils dilated to the utmost, and unmoved by the strongest light. Three grains of calomel were ordered to be taken immediately, and four leeches to be applied to the hypogastric region.

Sept. 28. 9 A.M. He became partially conscious between 3 and 6 A.M.; but soon relapsed, and was now profoundly comatose; pupils dilated. He indicated pain when pressed on the hypogastrium; otherwise he was unconscious.

POST MORTEM EXAMINATION, next day at 10 A.M. The kidneys, ureters, bladder, and urethra, as far as occupied by the incision, after full examination *in situ*, were removed. There was no stone or calcareous matter in any part. Both ureters were tortuous in their course, and greatly dilated, so that the little finger passed down them with ease; the dilatation was most at their lower ends, the left forming a complete pouch nearly as large as a pigeon's egg. Beneath and around this a puriform fluid appeared, and extended downwards into the recto-vesical pouch, into which the finger readily passed from the wound. The mucous membrane of the bladder was injected posteriorly, and ecchymosis occupied small patches here and there. The sphincter was not lacerated; the urethra, where incised, showed slight ecchymosis; the edges of the incision were turgid and lymphy; the *trigone* of the bladder was of an ashy grey. There was a blush of peritonitis in the pelvic cavity. After removing the bladder, &c., the sound was passed with the integuments of the abdomen closed, and the muffled click was heard again, though less distinctly. On opening the pelvis again, this was found to arise from the point of the sound impinging upon the iliac portion of the brim of the pelvis, the edge of which was unusually thin and sharp. Perhaps, here is an explanation of the click and feeling imparted to the instrument before operation. The instrument used in this case was a common steel sound, having at the hand end a socket, into which is tightly fixed a peg and a disc of wood; the latter six inches in diameter and one-tenth of an inch in thickness. The disc acts as a magnifier to all sounds heard, and is an useful addition to the instrument where it is desirable that a number of surgeons shall be satisfied of the presence of a stone.

On opening the head, the brain was found in a remarkably soft state. Both cerebral hemispheres and the cerebellum were so extensively, if not uniformly, marked by this softness, as to lead to the conclusion that such was the native condition of the child's encephalon; and we learn from the father, since its death, that he has lost his wife and five children; one of the latter "with water on the brain," another "by sudden convulsions, which took him off in five minutes while suffering from swelled purse." Though the consideration of this case, therefore, would *primâ facie* drive one to the determination not to operate in any case unless the clearest and sharpest click were given from the examining instrument, it is nearly certain that the opening of the bladder is not to be accredited as the main cause of death in this case; for the peritonitis was neither intense nor widely spread, nor, during life, more marked than I have seen it in cases that have been

freed from it, and going on well in a few days; and that, in whatever degree the peritonitis may be thought to have been tributary, the main cause lay in the excitability of a sensorium imperfectly constituted, and unable to bear the shock of the lengthened examination, operation, and chloroform action. I regret, however, now that, in ignorance of the peculiarity of the family history, I did not avail myself of a suggestion made by Mr. Benfield to postpone the operation for a few days.

But, if the explanation I have suggested of the sound which was heard by all, though not conclusively for operation, were the right one, the symptoms still remain as a mystery. We occasionally find cases of great pain and frequent micturition of small quantities, and which are attributable to irritable bladder or acrid urine; but these symptoms are usually accompanied by mucous or muco-purulent deposit, which we had not; and never, as far as I know, by sudden stoppage of the stream, followed by the passing of a larger quantity immediately after. How far we may accept the explanation ingeniously offered by Mr. Charles W. Wood of Woodhouse Eaves, in this county, at the post-mortem examination, I leave others to decide. He takes the very dilated state and pouchy form of the ureters as the cause of their more than usually oblique and valvular entrance into the bladder, and of a difficult, intermitting, and painful evacuation of their contents into it, the pain being transferred along the canal to the usual site at the glans penis. Certainly, the immense size and irregular form of these conduits were very striking.

ART. 131.—*Spontaneous Passage of a Fragment of a Broken Bougie from the Bladder.* By Dr. CHARLES PICAULT, of Montreal.

(*British Medical Journ.*, Dec., 1861.)

CASE.—On the 10th of November last, I was consulted by a young man labouring at the time under extreme mental anxiety. He told me, that a few years ago, he had become afflicted with a stricture of the urethra, which occasionally interfered with the free passage of his urine, and that, when so afflicted, he was in the habit of himself passing a bougie, which had uniformly succeeded in relieving, for the time being, the difficulty.

Suffering in the manner indicated, on the day just mentioned, he introduced a gutta percha bougie, and, on withdrawing it, discovered that it had become broken, and that about a third of its length had been left in the canal. His fears and apprehensions may be easily imagined. He did not despair, however; but, on the contrary, instantly went to work to endeavour to extract the portion thus left behind. He so far succeeded that, by the adoption of all the artifices that came to his mind, he effected the extraction of about an inch and a quarter, but he was obliged to leave the rest behind.

Anxious and uneasy, as related to ulterior consequences, he now resolved to seek medical advice, and applied to me.

After having examined carefully the urethral canal externally, and finding from the examination the perfect freedom of the canal from the presence of any foreign body, I requested him to pass water, which he did in small quantities, but without the least difficulty, thus leading to the inference, that there existed no particular impediment in the track of that canal.

I then introduced a silver catheter into the bladder, which entered with the greatest facility, and permitted the escape of an additional small amount

of water; but upon the most careful examination by this instrument, I could not detect the presence of any foreign body in that viscus, even in the slightest degree.

Under these circumstances, although the patient affirmed the contrary, I could arrive at no other conclusion than that the piece removed by the patient was the whole that had been left in the urethra, and that there existed an additional fragment in the bladder was simply the result of his over-excited imagination, or his excessively perturbed state of mind. I therefore endeavoured to quiet his apprehensions with instructions to call upon me again if he experienced the least uneasiness.

A week passed over, when who should come to my office but the self-same patient, but in a state of mind widely differing from that in which I first saw him.

"Here is the bougie!" said he, at the same time showing me a piece of gutta-percha bougie which he had wrapt up in a piece of paper, and which was covered with a considerable quantity of phosphatic deposit, especially at the fractured end.

He then proceeded to relate to me, that being engaged with friends that afternoon enjoying themselves over a bottle of gin, he felt an extreme desire to micturate, and in attempting to do so, the flow suddenly stopped, with the sensation of something having entered the canal from the bladder. He then strained as hard as he could, and both by severe straining, and pressing strongly on the perineum, he succeeded in giving exit to the piece of bougie, which was of No. 6 size, and rather more than an inch and a half in length —the same piece, in fact, which he shewed me.

Art. 132.—*Case in which a Kidney was removed by Operation.* By Dr. Wolcott, of Milwaukie, U. S. of America.

(*Philadelphia Med. and Surg. Journ.*, 1861; *Gaz. Hebd. de Méd. et Chir.*, Feb. 7, 1862.)

The disease for which this unique operation was performed was diagnosed to be cystic tumour of the liver! What next?

Case.—The operation was performed on the 4th of June, 1861. The patient was a man, æt. 58, tall, very emaciated, and with a complexion indicative of serious organic disease. In the right hypochondrium was a large tumour, of a semi-solid consistence, which seemed to be adherent posteriorly and superiorly, and which was diagnosed as cystic tumour of the liver. The urine was albuminous, and had been so during the greater part of the time that the tumour was in process of formation, a period of about six years. This albuminous condition of the urine appeared to be owing to the presence of the tumour upon the kidney. Dr. Wolcott was assisted by Mr. C. Stoddart, who, indeed, reports the case. Chloroform was administered. The tumour was exposed by a long incision; the peritoneum was thickened, and here and there more or less adherent. The tumour, which was soon seen to be of an encephaloid character, appeared to spring by a pedicle of the thickness of the thumb from the posterior edge of the liver. After the operation opiates were administered. The tumour itself weighed about two pounds and a half, and on incising it freely we found undoubted evidence of its being a kidney, from a small portion of its upper portion, which had not degenerated, showing the tubules and a portion of the pelvis of that organ. The patient lived fifteen days after the operation, and died, apparently from exhaustion, caused by the great amount of suppuration which necessarily followed.

(c) CONCERNING THE UPPER EXTREMITIES.

ART. 133.—*On a modification of the Heel-procedure in the Reduction of Dislocation of the Shoulder-joint.* By M. CHASSAIGNAC, Surgeon to the Hôpital Lariboisière, Paris.

(*The Medical Circular*, Feb. 12, 1862.)

M. Chassaignac is of opinion, that it would be an advantage in this procedure, for an assistant to support the upper angle of the scapula, which angle, in the process of reduction, has a natural tendency to follow the head of the os brachii. He also suggests two other modifications of the heel-procedure. In the first, the heel is to be applied to the axillary edge of the scapula, while the arm is drawn directly outward—a proceeding which renders it particularly necessary to support the upper part of the scapula, so as to prevent its revolving with the humerus. The second modification consists in pressing the heel over the coraco-acromial arch, the arm being at the same time raised towards the head of the patient, and drawn directly upwards. The latter plan is alluded to in a recent article of the 'Abeille Médicale,' the writer having succeeded in reducing a luxation of the shoulder-joint, which had baffled the efforts of two other surgeons. He relates the fact as follows:

"By a fortunate coincidence, I had recently read, in a medical journal, a paper on the subject of vertical traction in dislocations of the shoulder-joint. I laid my patient flat on the floor, and applying my foot over his shoulder, forcibly brought his arm upwards above his head. To the great surprise of the man himself, and of the persons present, reduction was thus effected with the utmost ease. . . ."

A similar success is not, of course, to be expected in all cases. But when one procedure has failed in the hands of expert surgeons, another should be resorted to, and here, as in other matters, it is well not to trust to one resource only.

ART. 134.—*Dissection of a case of Colles' Fracture of the Radius.* By Mr. ———.

(*Medical Times and Gazette*, April 16, 1862.)

CASE.—R. J—, æt. 39, was admitted into the Northampton Infirmary in a state of considerable but not extreme collapse, having fallen to the ground from a height of about sixty feet. There was a large lacerated wound in the right foot, exposing the os calcis and calcaneo-astragaloid articulation, the bone being completely pulverised. The collapse speedily became more intense, and associated with pallor of the lips and an anæmic aspect, and the patient died five hours after admission, the cause of death being discovered in a fracture of the right os innominatum, with great effusion of blood into the pelvic cavity and sub-peritoneal tissues of the abdomen. The patient was, however, also the subject of a fracture of he base of the right radius, and thus afforded an opportunity of dissecting his injur y while quite recent. The symptoms of an injury were, during life,

quite unequivocal. The "silver-fork" deformity was very well marked, the patient, however, retaining the power of pronation and supination in a considerable extent. The head of the radius rotated distinctly in obedience to movements communicated to the hand. Forcible adduction of the hand formed a distinct angle salient along the outer border of the forearm about an inch above the wrist-joint. No crepitus was detectable until very forcible extension was employed, when this symptom also became plainly recognisable. A careful dissection of the forearm was made twenty hours after death, the rigor mortis being at the time extremely developed—so much so that the elbow could be extended only by the exertion of considerable force. There was much blood extravasated in the cellular tissue in the neighbourhood of the injury, chiefly on the palmar aspect of the forearm, and a much smaller quantity was effused upon, and into the substance of, the flexos longus pollicis and pronator quadratus muscles. The other muscles were scarcely stained with blood. The long flexor of the thumb was prominent and bulging among the more superficial tendons; the supinator longus tendon occupied its normal position, and was certainly not in the least degree tense; the extensors of the thumb were slightly elevated from the bone at the seat of fracture. The bone had given way a little more than an inch above the wrist-joint—as nearly as possible one-half of the pronator quadratus remained attached to the upper fragment, the remaining half to the lower. The fracture was directly transverse; the upper fragment was pronated and projecting on the palmar aspect of the forearm, and the compact tissue of its dorsal and palmar surfaces was extended in the form of two spines about a quarter of an inch in length projecting below its cancellous tissue, the dorsal being a little the longer of the two projections. The lower fragment was twisted so that its articular surface looked outwards, downwards, and backwards, so as to bring the palmar and dorsal edge of the inferior articulating extremity of the radius into the same horizontal plane; and two thin plates of the compact tissue of its dorsal aspect were all but detached from the rest of the bone, being attached only close to the joint, which itself was uninjured. Until the fragments were forcibly separated they formed a retreating angle along the radial border of the forearm at the seat of fracture, and were impacted with moderate firmness; the posterior projecting spine of the upper fragment being thrust beneath the thin splintered plate of the lower fragment, and its anterior spine projecting beyond and overlapping slightly the lower fragment, forming the apex of the angle caused by the projection of both fragments towards the palmar aspect of the forearm.

ART. 135.—*A new procedure for the Ligature of the Superficial Palmar Arch.* By Dr. E. BŒKEL.

(*Gaz. Méd. de Strasburgh*, and *Journ. Prac. Med. and Surg.*, Oct., 1861.)

"Place the thumb," says Dr. Bœkel, "in the greatest possible abduction, and draw a line from its ulnar edge across the palm of the hand. In front of this, which may be denominated the guiding-line, draw a second in a parallel direction, at a distance of a third of an inch nearer to the fingers, or more correctly, at an equal distance between the first line and the middle cutaneous fold of the palm; this is the precise position of the superficial arch, and if the skin and palmar fascia are divided here, the artery will be at once exposed, and found

reposing on a layer of fatty tissue which separates it from the nerves and tendons. No apprehension of wounding these need, therefore, be entertained.

"It will perhaps be alleged that no fixed rules can apply to an artery so irregular as the palmar arch; but it must not be forgotten that the anomalies alluded to refer less to the exact situation of the vessel, than to the dimensions of its supplying branches. I have performed the ligature above twenty times, on the dead subject, guided by these rules, and have never once failed in alighting on the artery in the exact position described.

"An accurate knowledge of this anatomical detail has another advantage quite as great as that of giving increased facility in finding the artery—viz., it supplies us with the means of avoiding it. Phlegmonous inflammation beneath the palmar fascia, at the same depth as the arch, frequently requires incision, which is never extended towards the wrist without a certain amount of hesitation. The indications I have mentioned will permit the surgeon to use the knife with more boldness and at the same time with greater safety, and they have already done me good service for this purpose."

ART. 136.—*Cases of compound incomplete lateral Dislocation of the Ungual Phalanx of the Right Thumb Inwards.* By Mr. HOLTHOUSE, Surgeon to the Westminster Hospital, &c.

(*Proceedings of the Pathological Society of London*, Feb. 18, 1862.)

This accident is not described by any author, but two examples, one occurring in the index, and the other in the ring finger, had been reported by Malgaigne. Mr. Holthouse, during the last six months, has met with two such cases. One was that of a woman, from whom a cast was taken. The terminal phalanx was dislocated inwards, while a part of the distal articular extremity of the first phalanx projected outwards through a wound in the integuments. The thumb, at the joint, was bent at an obtuse angle, the concavity being towards the fingers; it could be flexed by the surgeon, but the patient had no power over it. It was easily reduced by extension with the clove hitch. The wound was sealed up by collodion, and a splint applied. In a few days, however, as the finger had become swollen and painful, the splint was removed. The dislocation then recurred. It was at this time that Mr. Holthouse first saw her, and took the cast. Mr. Holthouse then gave the particulars of another case, in which the deformity was the same, except that the convexity was towards the fingers. This was likewise reduced by extension with the clove hitch, the articular surfaces coming together with a very perceptible snap. Both these cases, as well as the two recorded by Malgaigne, occurred in a similar manner—namely, by falls on the hand with the fingers outstretched.

ART. 137.—*Cases of the reunion of Severed Fingers.* By Mr. EDWARD DANIELL, of Newport Pagnell.

(*British Med. Journal*, Jan. 11, 1862.)

CASE I.—A young man, Edmund Bedford, an apprentice to a wheelwright in this town, severed the end of his thumb by a sharp blow of a hatchet He ran off immediately to me, accompanied by his fellow-apprentice. The cut was not lacerated in the least; it was a clean cut, and admirably adapted for grafting; but the end of the thumb was in the sawpit. I despatched the youth who accompanied the patient to look for it; he returned very soon with the absent portion carefully wrapped in paper, but invested in sawdust. When this was removed, I fitted the part accurately on the wound; and placed a slip of lint two-thirds down the thumb, carrying it over its loose end to the same distance on the opposite side; round this I wound a longer strip of lint, and finally secured it with strapping. To make it still safer, I covered it over with what is called a thumb-stall. At the end of ten days perfect union had taken place, and at this time the thumb is as good as ever.

CASE 2.—A labourer of the name of Pell, from a neighbouring village, about three miles from my residence, cut off three fingers by a chaff-machine. He came hastily into the surgery, threw down his fingers on the table, and exclaimed: "I need not tell you what's the matter with me, sir." "No; but I am glad you brought your fingers with you; for I shall put them on again." The man objected much to this, and for some time obstinately refused to submit to such "foolish nonsense;" however, I succeeded in carrying my point, and the severed fingers were replaced on the wounds. The result was satisfactory; perfect union was established.

CASE 3.—About three weeks since, William Clare, of this town, publican, came to my surgery, having severed the ring-finger of the left hand by a chaff-machine, immediately below the nail, cutting through the phalanx. He was followed by his son, who had discovered the finger amongst the chaff. I carefully replaced it, and treated it in the same way as the preceding cases. At the end of ten days, union was perfect. The nail sloughed off, and a new one is rapidly forming.

(D) CONCERNING THE INFERIOR EXTREMITY.

ART. 138.—*On the Relation of the Insertion of the Capsule of the Hip-joint to Intra-Capsular Fracture.* By Dr. GEORGE SMITH.

(*American Med. Times*, Dec. 14 and 21, 1861, and Jan. 25, 1862; and *Med.-Chir. Rev.*, April, 1862.)

Dr. George Smith, on introducing this subject at the New York Academy, gave the following summary of his views: 1. The insertion varies so much, that scarcely any two specimens of the normal capsule taken from different subjects can be said to be inserted at the same point; so that, while a fracture of the neck at a given distance from the inter-trochanteric line will be found in one specimen included within the capsule, it will be half an inch or more external to this in another. 2. The descriptions of the insertions given in works of

anatomy are even more widely at variance than the differences seen in nature, not one of the writers intimating that the insertion ever varies from the position which he has assigned to it. 3. The insertion is often removed by the morbid changes consequent on the fracture, so that the capsule of the fractured bone cannot furnish reliable evidence that the fracture was within the normal capsule. However much the normal insertion of the capsule may vary, it never takes place at a point so distant as the shaft of the bone, where, however, the capsule of a fractured bone is often found inserted, the neck of the bone having been removed by absorption before union occurred. 4. Capsular ligaments of the opposite femurs of the same subject are always alike in their insertions. After death, a comparison of the two sides will therefore at once determine whether the line of union be altogether within the normal capsule. 4. The line of union in a given specimen cannot be said to indicate the exact position of the line of fracture, if the neck suffered loss by absorption before union occurred, as it is impossible to determine that the loss of structure was entirely at the expense of either fragment of the neck. 6. Under favorable circumstances, fractures of the neck external to the capsule unite readily by bone, as do fractures which are partly within and partly without; and it is highly probable that fractures within the capsule which are followed by absorption are sometimes united by bone after the process of absorption has reached a point external to the normal capsule where bony matter is supplied. But this can never be proved; for if the line of union be partly without the capsule, it is impossible to determine that the fracture was entirely within it. We can never be positive that bony union of intra-capsular fracture has occurred until a specimen is presented in which the line of union is found to be entirely included by the normal capsule. 7. Fractures of the cervix are in most instances followed by the absorption of a part or the whole of the neck; and a careful review of the cases recorded as proofs of bony union of intra-capsular fracture shows that, in the great majority of cases, the posterior surface of the neck had lost very much of its length by absorption before union had occurred, and that the line on this surface, although included by the morbid capsule, was too near the shaft of the bone to be included by any normal capsule. 8. Fracture within the capsule is followed by disease of the tissues constituting the hip-joint; and the loss from absorption, due to imperfect nutrition after the fracture gives rise to an appearance so similar to that produced by the interstitial absorption from age, that asserted specimens of intra-capsular union have been supposed to be only examples of such changes. In future cases, it is of great importance that the diagnosis of the fracture should be well made out in a view to future confirmation by an autopsy.

Dr. Post, while treating some of Dr. Smith's propositions as not even probable hypotheses, admitted the importance of his demonstration that the extent of the cervix inclosed within the capsule varies much in different subjects, and that there is a considerable portion of the cervix between the insertion of the capsule and the inter-trochanteric lines. It may be inferred, however, from all this, that it is usually impossible during life to determine whether the fracture is entirely

within the capsule, while even after death, when absorption has taken place, this may be impossible to do. Dr. Post, therefore, proposes dividing these fractures into two classes, terming those situated between the caput femoris and the inter-trochanteric lines *intra-cervical*, and those at the inter-trochanteric lines, extending more or less into the shaft of the bone, *extra-cervical*—the division corresponding nearly with that of intra- and extra-capsular. He offers the following propositions: 1. *Intra-cervical fractures* are usually included within the capsular ligament, being near the head of the bone, and often involving a portion of it. 2. They are attended with a shortening of the limb, which in recent cases rarely, if ever, exceeds an inch. 3. Bony union very rarely occurs. 4. Whether bony union takes place or not, the cervix becomes greatly shortened, and after several weeks or months the shortening may amount to two inches or more. 5. As the neck is shortened by absorption, the capsule shifts its position, so that in some cases it ultimately becomes attached to the shaft of the bone. 6. In *extra-cervical fractures* the cervix is driven into the spongy structure at the junction of the trochanters with the shaft; and if the fracture be the result of a moderate amount of force, the upper fragment will be impacted in the lower, the shortening varying from $\frac{1}{4}$ to $1\frac{1}{2}$ inch. 7. When the amount of force is greater, the trochanters split off, the fragments acquiring a great degree of mobility, and the shortening varying from 1 to $2\frac{1}{2}$ inches. 8. Bony union may be generally expected, if the patient be not infirm or of very advanced age. The union of the trochanters with the shaft takes place earlier than that of the neck. 9. There is not usually any remarkable shortening of the cervix.

ART. 139.—*Case in which the Femur was dislocated downwards and forwards, or under the arch of the Pubis.* By Dr. E. W. HODDER, Surgeon to the Toronto Hospital, &c.

(*British American Journal of Medicine*, March, 1861.)

The dislocation which is here described is of the most uncommon kind. Possibly, it is unique.

CASE.—A muscular man, æt. 22, upon whom a mass of earth fell whilst engaged in excavating a bank, at 6 p.m., Jan., 15, 1855. He was first struck on the shoulders, by which he was knocked down, and a large quantity of the earth afterwards fell upon his loins and upper part of his thigh whilst he was attempting to escape. He was brought to the hospital an hour after the accident. He then complained of great pain in the right thigh and in the region of the hip-joint. The singular position of the limb at once attracted Dr. H.'s attention, and on making a very careful examination it was found that the head of the femur had been thrown downwards and inwards, completely under the arch of the pubes, the neck of the bone resting on the ramus of the pubis, immediately below the origin of the gracilis muscle, and either between or through the origins of the adductors.

When supported in the upright position, the thigh formed very nearly a right angle with the trunk, the knee being as high as the head of the bone,

the leg was at a right angle with the thigh, the knee turned very much outwards, the toes turned slightly outwards and pointed downwards. When he was allowed to place himself in the position which gave him the least pain whilst standing on the sound limb, the trunk became much bent forward, the knee consequently less raised. The trochanter major could scarcely be felt, but was anterior and much below its normal position, and thrown inwards towards the mesian line of the body. One of the most striking symptoms in the case was a remarkable concavity below the dorsum ilii, caused by the absence of the great trochanter, and by the gluteus maximus, as well as the medius and minimus, being put so much upon the stretch as to render the bodies of these muscles quite flat, instead of presenting their ordinary rounded form.

On examining the perineum and tracing the ramus of the ischium from the tuberosity upwards, a firm round projection could be felt at about the junction of the ischium and pubis. This projection was anterior to and rested upon the ramus of the ischium, and it was found to move when the leg was rotated together with the trochanter. The psoas and iliacus muscles felt very much upon the stretch.

When the patient was examined in the recumbent position the thigh was less flexed upon the abdomen, but it was more turned outwards than in the upright position. On measuring from the anterior-superior spinous process of the ilium to the upper edge of the patella, the length of the two limbs was nearly the same, the injured leg, if anything, being the longest; but the distance from the same point of the ilium to the trochanter on the two sides, showed a remarkable difference, the trochanter of the injured limb being fully two inches further removed, and to the inner and under side.

The next day at noon, the symptoms remaining the same, the reduction was determined on.

The man was placed upon a table in the recumbent position; chloroform was then administered until perfect anæsthesia was produced. A strong belt was passed round the pelvis, on the same plane as the body, for counter extension, and the pulleys were applied at nearly right angles to the vertical plane of the body, but a little inclined downwards; a round towel was also used for the purpose of dislodging the head of the femur from under the ramus of the ischium and pubis. Extension was now commenced and cautiously continued for some minutes, the muscles being extremely tense and rigid.

The ankle was grasped by an assistant and the leg drawn towards the mesian plane. After the extension had been continued for about fifteen or twenty minutes, and the round towel used to dislodge the head of the bone, a hard grating sound was heard, followed by an indistinct snap. The force was immediately relaxed, and a careful examination again made, when it was found that the head of the femur now no longer occupied the former situation under the pubes, but that the accident had been converted into a dislocation into the foramen ovale presenting all the characteristics.

The pelvis strap and pulleys were again readjusted, but the direction of the force was now more upwards and outwards, the ankle held by the assistant was drawn under the other and at thea me time rotated, and in a few minutes the head of the bone was felt to move, and almost immediately afterwards slipped into the cotyloid cavity, with the same grating sound as when it was dislodged from under the arch of the pubes. This sound more resembled that produced by the laceration of muscular and

tendinous structures than the clear snap generally heard on the reduction of a dislocated bone.

The force required was considerable, but the patient was well under the influence of chloroform during the whole time, except at the close; and when the luxation was reduced he immediately exclaimed that the bone was in its right place, and expressed himself greatly relieved.

His legs were bound together and he was placed in bed. From this time until the 5th day of February not a single bad symptom presented itself; he gradually recovered the use of his limb, and on the day of his discharge (5th February) he was able to walk very well with the use of a stick.

ART. 140.—*Case of Primary Excision of the knee-joint after a gunshot wound.* By Mr. CROMPTON, Sen. Surgeon to the General Hospital, Birmingham.

(*Medical Times and Gazette*, May 18, 1861.)

CASE.—George W—, æt. 19, was admitted into the Birmingham General Hospital, December 26, 1860, having received the contents of his gun early that morning into the left knee-joint. He was putting a cap on his gun, with the stock on the ground, when the gun went off, causing a large circular wound opposite the internal condyle of the femur, and at an interval of about an inch and a half, another larger wound over the inner side of the head of the tibia. Both wounds were blackened by the powder. On introducing my finger into the upper wound, I found that the shot had passed into the structure of the inner condyle of the femur, breaking off a portion loose into the joint, and then the force seemed to have passed downwards, grazing the inner side of the head of the tibia. The finger consequently could be introduced into the joint, and it appeared probable that most of the injury had happened to the inner part, and that the shot had not traversed the joint. Considering the patient's age, and the importance of saving his limb, if possible, I determined to open the joint by beginning my incision at the upper wound, passing through the lower one, and making a semicircular cut through the ligamentum patella to the other side, as is usual for excision. On turning up the flap with the patella, I found only the injury I have mentioned. I therefore sawed off a thin portion of the head of the tibia, and a corresponding thin portion of the condyles of the femur, for the purpose of making two flat opposing surfaces for anchylosis. I then sawed off obliquely nearly the whole internal condyle of the femur, on account of the destruction of its structure, cleared out all the shots, which were very numerous, and removed the fractured portion, placed the patient on a water-cushion, and the limb on a straight metal splint. The wound was closed by several sutures, and the whole swung in a Salter's swing. It will be observed that I did not meddle with the patella, or its cartilage, nor did I remove any portion of the articular cartilage of the femur, except what was attached to the portion of the condyles that were removed by the saw. The patella, therefore, was replaced in its articular position with the femur untouched. Wet lint was the only dressing applied to the wound.

December 27.—Pulse 112; has had some startings of the limb during the night. Evening; pulse 144.

28th.—Pulse 120; dressings removed for the first time.

29th.—Pulse 115.

31st.—Wound granulating, and discharging healthy pus.

January 1, 1861.—Only three-fourths of the wound have united, the contused portions sloughing out, and the discharge free.

3rd.—Vomited; wound still looking sloughy.

9th.—Wound now suppurating healthily. He has been used to smoke and drink pretty freely, and was always a pale, thin person; looks ill, and very thin; diet generous, to have what he fancied as to food or drink.

21st.—Splint and paddings changed for the first time since the operation; transverse incision quite healed; the large wound on the inner side granulating up from the bone, so as to approach the surface of the integuments.

25th.—Wound slowly healing.

February 1.—Wound reduced to the size of half-a-crown, having been from four to five inches square after the sloughing process was completed.

March 25.—The leg has been taken off the splints, and he can lift it from the bed without any assistance; got up for the first time.

April 1.—Can walk with a stick, and bear half the weight of his body on the left leg.

5th.—Discharged cured; wound closed, with the exception of a spot the size of a pea on the inner side; health good; can walk easily with the help of a stick, without any application to the knee. On examining the present state of the limb, it is found to be from half to three quarters of an inch shorter than the other, but the most interesting part of the case is, that the patella is now as loose, and plays as naturally over the end of the femur laterally, with every indication of the cartilages being still intact, as if the knee had never been opened. This, I think, is a new and unexpected feature as a result of excision, opposed to the not uncommon opinion that to leave the cartilages, or any portion of them, is a source of danger; and so it may be, when there is only a small opening into a joint.

ART. 141.—*On the treatment of Popliteal Aneurism by Pressure on a new principle.* By Dr. BLAND, of Sydney.

(*Australian Medical Journal*, Oct., 1861.)

"The patient," says Dr. Bland, "had been under treatment in one of our public institutions about seven weeks, when he left, at his own urgent request, 'worn out by the sufferings he had undergone' from the rigid pressure with which the cure had been attempted, and therefore 'determined to submit to no other experiments,' as he expressed himself, 'of any kind.' He was, however, not many days afterwards, persuaded by his friends to place himself under my care in the Benevolent Asylum, when, in order to obviate the patient's dread of pressure, I was induced, from having observed that the calibre of some of the largest arteries might be completely obstructed with firm coagula, particularly in those parts of their course where, for any considerable distance, large branches were given off, to devise the following plan of employing pressure in the present case, viz.:—First, to use no degree of pressure beyond what would be found sufficient, not all at once, but gradually to reduce the stream of blood in the vessel to be acted upon, and this so as not to produce pain. Secondly, to apply the pressure on two or more different points in the line of the artery, a plan which was carried out in the following man-

ner:—The patient was placed in bed, on a firm mattress, in a half sitting position, while the thigh was made to form an inclined plane in the opposite direction to that of the body, the leg and foot being placed horizontal, on a soft pillow, in a frame or cradle raised some ten or twelve inches above the surface of the mattress, the weight of the bed clothes to be prevented from resting on the foot of the patient by a foot-board. Two tourniquets, which were found sufficient, one to the artery in the groin, the principal object of which was to divert the stream of blood as early as possible from the inguinal artery into the internal iliac and its numerous large branches, and one of the tourniquets to the upper border of the popliteal space, care being taken not to make any painful amount of pressure on the nerve which accompanies the artery, while the tourniquets, being applied with a steel or iron ring instead of a strap, were constructed so as to make no pressure except by means of their two respective pads, one placed upon the artery, the other on a spot immediately antagonistic to it, for counter pressure. The pads, also, were slightly elongated in their longitudinal direction, so as, with the aid of the metallic rings just mentioned, to secure to them a steady bearing on the spots to which they were applied.

"The tourniquets each consisted of a light, but strong, iron ring instead of a strap, each ring fitted a hinge on one side, and immediately on the opposite the ring readily opened or closed, so as to facilitate their application without in any way disturbing the patient. The pads, too, were not broad, but, instead, were elongated, so that, while the rings afforded a steadiness of position to the instrument in a *transverse* and *vertical* direction, an equal degree of steadiness was imparted to them in the *longitudinal* direction, by the two pads attached to each tourniquet. The management of the tourniquets was simple, and attended with no incertitude or trouble. If the pads of either of the tourniquets began at any time to feel a little tight, the pads of the other tourniquet were at once slightly tightened, and then the pads which had begun to feel somewhat uneasy were proportionately and cautiously unscrewed, so that the full amount of the requisite pressure was never, even for a moment, dispensed with; all of which was carried out without pain, or even inconvenience, to the patient, and in less time than it has taken to describe it—indeed, the pads were so readily managed that, latterly, this alternate slight tightening and loosening of the pads was not unfrequently, towards the close of the treatment, left to the discretion of the patient.

"The effects of the above management were soon manifest. At the expiration of about ten days from this initiation, the enlargement of one of the small superficial arterial branches of the knee had become sensible both to the sight and touch, and all pulsation in the aneurismal tumour had ceased. At the expiration of another similar period, the limb had been, but with great caution and gentleness, both straightened and flexed; the tumour had become considerably reduced in size, and, in a few more days, the patient was enabled to be discharged, cured."

ART. 142.—*A new mode of treating Fractured Patella.* By Dr. COOPER, of San Francisco.

(*San Francisco Medical Press*, ; and *Dublin Medical Press*, Nov. 20, 1861.)

Professor Cooper writes:—"Our method of treating transverse fractures of the patella, and one which has, thus far, been invariably successful, is as follows:—Make a longitudinal incision, of sufficient length to expose the fragments; drill the anterior margins of them with a drill, one line in diameter; then pass a silver ligature through the holes thus made, and, by crossing the ends and pulling stoutly upon them, bring the separated parts together. A knot is then made by twisting the ends of the ligatures together, which holds the fractured portions of the patella in apposition, by which a bony union always takes place." As essential to success, Professor Cooper insists that the wound be healed by granulations, and not by first intention. To this end, lint should be placed in the wound, and the limb tightly bandaged from the toes to the middle of the thigh. The dressing he would advise to be changed only once a week. At the end of the third week, he would omit the lint, but continue the bandage. The wires should be removed at the end of six or eight weeks. He concludes by saying, "After the operation of applying metallic ligatures in this way, the patient scarcely ever suffers to any considerable extent, and generally remains entirely free from pain during the whole course of treatment; but, in order to have it so, the keeping of the wound open and the application of the tight roller are indispensable."

ART. 143.—*On loose Cartilages in the Knee-joint.* By Mr. SQUARE, Surgeon to the Devon and East Cornwall Hospital, &c.

(*Pamphlet*, London, Fieldson and Jarry, 1861.)

In a pamphlet, reprinted for the 'London Medical Review,' Mr. Square relates nine cases, which show very conclusively the advantages of the subcutaneous operation, as proposed by Mr. Syme. These cases occurred in his own practice, and in that of his colleague, Mr. Whipple. In the nine cases, the knee-joint has been opened by subcutaneous incision thirteen times. There was neither pain, inflammatory action, nor any serious symptom in any one instance. The steps of the operation were alike, the after-treatment the same. A small pad was placed along the tract of the wound, and upon its orifice, to press the surfaces of the tract together, to prevent hæmorrhage, and to retain the cartilage *in situ*. A straight splint was applied along the back of the limb, to avoid movement of the articular surfaces. The patient was confined to bed, with the limb at an angle of 45°, and in the majority of the cases, but not in all, water dressing was employed.

ART. 144.—*A case of Elephantiasis Arabum affecting the leg, with an anatomical examination of the structure made after amputation.* By Mr. HENRY THOMPSON, Assistant-Surgeon to University College Hospital, &c.

(*Proceed. of Royal Med. and Chir. Society*, March 26, 1861.)

CASE.—A woman, æt. 42 years, had suffered from gradually-increasing enlargement of the right foot and leg, which commenced six years ago. Simple chronic ulceration had affected it for many years previously. She had never been in India, but her husband, a soldier, had been there five years, and returned invalided. They lived together for eighteen months afterwards, when he died of acute pleurisy. Her family has not been healthy, although she, with the exception of the leg affected, has enjoyed excellent health. Of late the limb had greatly increased in size, and was subject to very frequent attacks of inflammation and violent pain, disabling her from following any occupation, and for the treatment of which she had been an inmate of the Marylebone Infirmary twenty-two times within two or three years. It was on this account she wished very earnestly that it might be removed, and she was admitted into University College Hospital, under Mr. Thompson's care, for that purpose. The measurement round the heel and instep in the left leg was twelve inches; in the affected one seventeen inches and a half. This is a fair index to the comparative magnitudes throughout; but the difference ceased altogether just above the midleg. The author amputated immediately beneath the knee, on January 9, 1861, and she left the hospital, after progressing very favorably, in about five weeks. Dr. Harley, Professor of Histology at University College, made a careful anatomical and microscopical examination of the limb, the summary of numerous details being, that he found "the muscles and tendons, as well as the bones and cartilages, in no way implicated in the disease; even the subcutaneous areolar tissue appears to be perfectly normal. The disease in the present case, at least, is essentially a disease of the skin, and more especially of the true skin, or derma, the changes occurring in the epidermis being probably the result of disordered nutrition, and secondary to those occurring in the true skin.

ART. 145.—*On the Treatment of Varicose Ulcers without Rest.* By Mr. J. H. HOUGHTON, Surgeon to the Dudley Dispensary.

(*British Med. Journal*, Jan. 25, 1862.)

The object of this communication is to recommend the use of flannel bandages, as suggested by Mr. Hunt.

"Modern surgery," says Mr. Hunt, "is competent to the treatment of ulcerative diseases of the leg. There is, I believe, no essential defect in it; no necessity for anything new. Why, then, is it so notoriously unsuccessful? Mainly, because the application of the bandage is looked upon as a simple and easy operation, which may be safely intrusted to the patient or nurse; whereas, I know of few operations in surgery more difficult to perform, or requiring more painstaking practice than the application of a bandage to the human

leg in such a manner as that every portion of the limb shall receive equal and abiding support."

"He also observes that the extraordinary success attending the practice of Scott and Baynton consisted mainly in their skill in applying the bandage.

"Calico and linen bandages," says Mr. Hunt, "are generally inefficient, and often useless. They do not yield sufficiently to the motions of the limb; consequently, they cut the limb on one edge, and become loose on the other. The elastic cotton bandage sold at the shops is a very stupid affair. The two edges are stitched together, and form a cord, which cuts the leg if the bandage is tightly applied; and if not tightly applied, it is useless. If the ulcer is disinclined to heal, a flannel bandage is essential to its permanent cure. This bandage should be made of moderately fine Welsh flannel, from seven to eight yards long, and exactly two and a half inches wide, and without a joining."

"Now, the use of flannel bandages is the gist of all Mr. Hunt's paper, and is the point which I wish specially to bring before the members of the Society. At the Dudley Dispensary, the number of cases of varicose ulcer which are constantly attending is very large; and it was whilst treating a number of them, and feeling how very unsatisfactory the treatment was, that I read Mr. Hunt's paper, and gave his plan a trial; and four years' constant experience has enabled me to speak confidently of its importance and advantage. Cases which I had before looked on with horror and dismay, I now found I could manage without difficulty, and with almost a certainty of a speedy cure; and this without confinement, or without the least necessity for the patient's relinquishing his usual occupations.

"If the bandage be properly applied, it will remain immovable for an indefinite period. I have repeatedly seen it remain three weeks without the least displacement; the patient, feeling comfortable, had not come up to have it changed for that time.

"I do not intend to take up the time of the Society by entering fully upon the different preparations best suited to each form which varicose ulcers may assume. As a general rule, I strap the wound itself with a few strips of soap-plaister; or perhaps dress it with some simple dressing or water-dressing. For all ordinary cases these are amply sufficient; and if the rolling be properly attended to, the ulcer begins to heal in a very few days, as I believe, almost irrespective of the dressing, so long as that be not positively prejudicial. Generally, however, I prefer the soap-plaister."

"Mr. Hunt gives elaborate directions for applying the roller, and for padding the hollow under each malleolus; but my experience has not shown me the necessity of this, and, in fact, every necessary pressure may be attained without it. I first make one turn with the roller round the bottom of the leg, then one under the sole of the foot, over the instep and round the back of the foot (keeping the edge of the roller as low as possible) and then again over the instep, till the lower edge of the bandage passes round the foot, at the root of the toes, about two turns round the foot and then spirally up the leg to the knee. If the roller be thus applied, it will be found that it will lie

quite even, and indeed seems almost naturally to follow the course I have described, and will not require a turn in the roller till it reaches the calf; and by a little practice it may be brought down sufficiently low to afford ample pressure to the fossæ under the ankles."

In conclusion, Mr. Houghton relates several cases in illustration of the success attending this mode of practice.

ART. 146.—*An elastic garter for Varicose Veins.* By Dr. WILLIAM HARGREAVE, Professor of Surgery in the Royal College of Surgeons of Ireland.

(*Dublin Medical Press*, Jan. 29, 1862.)

"I have," says Dr. Hargreave, "been applied to by many practitioners for a reference to procure the elastic garters in this city for the relief of this affection, as they are unable to procure them from the surgical cutlers and instrument-makers. To remedy this want, a good substitute for the elastic garter of india-rubber, is the material called elastic, sold in the trimming-shops, from one to one-and-a-half inch wide, from 5d. to 6d. per yard. A garter of about half or three quarters of an inch less in circumference of the leg below the tuberosity of the tibia can be readily and effectively made from this material, and applied upon the leg before rising in the morning, with a pad or dossil of lint placed between the garter and the veins. If it is found to be rough and to press unevenly upon the skin, a narrow band of chamois leather, placed around the leg beneath it, will obviate this inconvenience. This simple and *very cheap* appliance will be found as efficacions as the vulcanized india-rubber garter."

ART. 147.—*On complete Resection of the Astragulus.* By Dr. OSCAR HEYFELDER, of St. Petersburg.

(*Dublin Quarterly Journal of Medical Science*, Feb., 1862.)

The two cases which we here reprint have occurred in the practice of Dr. Heyfelder, since the publication of his work on resections of bones and articulations. Since the year 1670, when Fabricius Hildanus performed the operation for the first time, the astragalus has now been removed wholly in 73 cases, partially in 5. Of the 78 operated on, 67 lived and 11 died, and in 65 the result was altogether satisfactory. In 10 of the successful cases, the foot continued to be moveable from the formation of a new articulation; in the remainder, the ankle-joint was anchylosed. Traumatic injury was the occasion of the operation in 69 cases.

CASE. I.—Ivan Terasimof, æt. 30, coachman, received a semi-luxation of the astragalus by a heavy butt falling upon the back of the extended and fixed right foot. No wound of the skin, but a very considerable swelling of the ankle. Received into the hospital for workmen; the inflammation and swelling yielded to an antiphlogistic treatment; but the skin of the back of the foot, where it was over-extended by the luxated astragalus,

became gangrenous, and the foot remained in the position of extension, the ankle joint being incapable of any movement. After some weeks, not only this state remained, but a fistula had formed itself on the inside of the foot, corresponding to the anterior and exterior parts of the astragalus, where a probe might be introduced into the softened osseous tissue, and easily made to penetrate even to the skin at the exterior side of the foot.

The dislocation of the astragalus being an irreducible one, and the osseous tissue being even more carious, I proposed the extirpation of the dislocated bone; the more so as this operation, in sixty-three previously recorded cases, had given very good success.

The 28th of September, 1860, I proceeded to the operation. A curved incision, the convexity towards the toes, divided only the skin, and permitted me to separate the skin from the subjacent tissue, to separate the well-conserved extensor tendons, and put them aside. The dislocated astragalus being pressed into the tissue of the cuboid bone, and firmly retained by the posterior and inferior ligaments, it could not be removed but with much difficulty, and by dividing the tendons of the extensor digitorum longus. The astragalus being extirpated, and the morbid parts of the cuboid being removed by the help of a gouge, I joined the wound with silver sutures, fixed the foot upon a splint, and laid it in a warm water bath.

30th September.—The pains of the wound very tolerable in comparison with what he had suffered before. Suppuration good; the whole state very satisfactory. On the 8th October the sutures were removed, and almost the whole incision found closed by the first intention. The movement of the toes are very easy, and not at all painful. In this, as in other cases, the *secondary operation*, in comparison with primary ones, has proved preferable, by the slight degree of reaction, and, in general, by the easiness with which this was supported.

When the permanent bath ceased to be agreeable to the patient (about the 14th day), the limb was put in a dry bandage, and, from time to time, movements were undertaken. He received a corroborating diet, and went on pretty well; when, three weeks after the operation, the foot was taken with erysipelas, which is almost endemic in that hospital.

A fortnight after his restitution, when the movement of the toes, and even of the ankle joint had been established, hospital gangrene broke out in the wards, with which he was very dangerously affected. Our usual remedy, cataplasms of grated carrots, and the internal use of decoction of cinchona with aromatic tincture and acids, restored the man, after that even amputation had been taken into consideration. From the seventh week the convalescence went on without further interruption. Active and passive movements took place every day; and with the beginning of December the first essays of walking could be made without much pain or difficulty. The 26th December the man left the hospital, quite restored to health, his foot being cured. The wounds closed; position and movement normal; no deformity; the shortening of the limb 1½cm. (six-tenths of an English inch); the sole something flat; the back of the foot of a quite normal form; sensibility, temperature, and the colour of the skin like that of the other foot.

Case II.—Ludwig Susemuhl, æt. 14, baker, of a delicate complexion, fell, in the beginning of the month of October, 1860, and got a distortio in articula pedis, whose consequences had not yet quite disappeared, when he fell a second time, and hurt the same ankle joint in a very painful way. When he entered the hospital for workmen, on the 10th November, we found an irreducible dislocation, a considerable swelling of the foot, great

painfulness, which increased by touching or movement; inability to walk. Twenty leeches, and fomentations with aqua saturnina could only allay the pains and inflammation, but not change the general state of the foot; nor could the local application of unguents, and the internal employment of nitrate of soda cure the symptoms of a local chronic inflammation and a general state of fever. Abscesses, which formed on the inner side of the ankle joint during the month of December, were opened, and gave issue to a laudable pus. They corresponded to a rough, carious, and softened part of the astragalus. The whole bone proving carious, and the neighbouring bones being intact, I proceeded, on the 28th December, to the removal of the diseased astragalus. As I believe it of great importance in all resections that the wound of the skin should coincide as little as possible with the defect in the bones (the former should be as far as possible from the latter) I made a real gaiter-like incision (like that of Baudens for the exarticulation of the ankle joint). Continuing, as in the former case, and finding the bone not as firmly attached, I succeeded in keeping sound all the extensor tendons, and in removing the bone in two halves. The tendons being isolated, and kept aside, I introduced the chain-saw, and divided the astragalus in an oblique line. No blood-vessel being to tie, I adopted the same bandage and treatment as in the former case. The local success being almost as good as after the first operation. The symptoms of tuberculosis pulmonum et intestinorum showed themselves more and more; the wound got gangrenous; and in the end of January he died with phthisis generalis. The post-mortem examination proved lungs and bowels covered with tuberculous deposits, and the wound of the foot filled with unhealthy pus, notwithstanding its partial reunion.

PART III.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(A) CONCERNING PREGNANCY AND PARTURITION.

ART. 148.—*Practical Midwifery, as observed in the Madras Lying-in-Hospital from 1st January, 1857, to 30th June, 1859.* By Dr. J. L. PAUL, late Superintendent of the Hospital.

(*Madras Quarterly Journal of Med. Science*, July and Oct., 1861.)

During the period under consideration 2135 women were confined in the hospital; of these 1824 were cases of natural labour, 130 of difficult, 81 of preternatural, 74 of complex, and 29 of complex and preternatural labours.

These 2135 women produced 2154 children, 25 women having given birth to twins, 2 to monsters not entered as children, and 4 dying undelivered.

Of the 2154 children born, 1142 were males, and 1012 were females, or in a proportion of 1·1 males to 1 female, or 53·0 per cent. of males.

Of the 1142 males 1007 were born alive, and 135 or 11·8 per cent., still; of the 1012 females, 211 were born alive, and 101 or 9·9 per cent., still.

59 forceps cases occurred, 29 perforation of the head, 6 perforation of the thorax, 26 turning.

The causes of the forceps being employed in these 59 cases were as follows:

Puerperal convulsions	9
Ruptured uterus or vagina	3
Accidental hæmorrhage	3
Tedious and difficult labour	43
To avert pressure	1
	59

Of the 59 forceps cases, thirty-two children were lost; of the 32 stillborn children, 23 occurred in women who had been upwards of forty hours in labour, showing clearly that the duration of labour has a most serious influence on the life of the child.

The deaths from puerperal causes are 25, or 1·12 per cent. of all labours; the deaths from non-puerperal causes are 13; thus—

Rupture of uterus and vagina	11
Puerperal convulsions	10
Accidental hæmorrhage	3
Exhaustion from tedious labour	2
Dysentery and diarrhœa	5
Disease of the heart and lungs	3
„ „ stomach and bowels	1
Dropsy	1
Peritonitis (non-puerperal)	1
Cholera	1
Remittent fever	1

The Report contains the particulars of many of the cases, and several tables framed upon the same plan as the tables in Dr. Collins' Report of the Dublin Lying-in Hospital.

Art. 149.—*On preparing for Turning in Dry Labours.* By Dr. Langer, of Davenport, Iowa.

(*American Medical Times*, No, 14, 1861.)

Dr. Langer speaks in the highest terms of the following plan for facilitating turning, when this is required in "dry" labour:—"Previous to turning, I place the patient on her back, side, or on her elbows and knees, as the case suggests, the better to enable me to introduce into the os tincæ two or three fingers to reach the child. With these I endeavour to carry between the head and shoulder, if it is a shoulder presentation (or near any convenient part according to the malposition), a large elastic catheter, whose orifice and pointed end are filled to the length of one inch, with clean lard, which has been kept at a low temperature, the mouthpiece of the catheter being attached to an elastic tube connected with a stopcock and an elastic Davidson or other forcing-pump. Before connecting the catheter with the pump, I fill the catheter with sweet oil, at blood temperature, and lock the cock to keep the air out. I now endeavour to introduce the catheter as high up as practicable into the cavity of the uterus; better, if possible, between the ovum and inner walls of the uterus, but always opposite to the attachment of the placenta. Having reached with the point of the catheter the required height, I connect the catheter with the pump, filled with tepid oil, the free end of the pump being immersed in a vessel containing oil kept at the same temperature. I inject with a small degree of force, in the interval of pains, from a pint to a quart or more of oil, directing the patient between the injections to change her position from back to side, or elbow and knees, and *vice-versâ*, even to sitting or walking. On one occasion, when I could not get oil, I used the white of egg. From this simple operation I have noticed the most pleasant results, namely, I have seen patients who had been for twenty-four hours and more in intense suffering, in a

comparatively short time calming down, with contractions of the uterus less annoying, the uterus, too, becoming more pliable to the hand for the operation of turning. No great difficulty was then experienced, and the employment of force was not required. Nay, I have succeeded even, after such preparation, in changing a malposition into a normal one, by the combined method of internal and external manipulation, without introducing the hand into the cavity of the uterus. The patients so treated have had less symptoms of nervous shock, and have exhibited far less the consequences of the dreaded operation, and consequently their recovery has been more speedy."

ART. 149.—*On Plugging the Vagina in cases of Hæmorrhage from Placenta Prævia.* By M. PAJOT.

(*Medical Circular*, April 9, 1862.)

In an account of the practice at the Hôpital de l'Ecole de Médecine at Paris, are some remarks upon M. Pajot's method of plugging the vagina in cases of this kind. In the first place, he introduces the speculum, and pours into its cavity three or four glasses of cold water, for the purpose of removing the coagula, and cleansing the os uteri. Twelve or fifteen balls of lint, and as many of spongy agaric are prepared, of the size of the thumb, and each provided with long threads, which hanging beyond the vulva, may subsequently be used for their extraction. One of these pledgets is seized with a polypus-forceps, steeped in the solution of sesquichloride of iron, and inserted into the os uteri, if the latter be open. Formerly, M. Pajot was satisfied with the application of a single pledget, but this he has found insufficient. Under the influence of the flooding, and of the local irritation induced by the plug, dilatation of the os uteri took place, and the occlusion ceasing to be complete, in consequence of the change in the relative proportions of the orifice and of the obturator, the hæmorrhage again returned. M. Pajot now conveys, in succession, four or five balls of lint impregnated with the hemostatic liquid, over the cervix, so as to fill the fundus of the cavity of the vagina. He then inserts the dry lint and the fragments of agaric in succession, and forms an efficient plug, which the blood cannot easily penetrate. He gently, with the accumulated lint, fills the one half of the cavity, and completes the operation by adding oiled tents of lint; the amount which can thus be introduced is truly surprising, and it is important to be aware of the fact, in order to secure a solid dressing, which is, moreover, supported externally by compresses and an appropriate bandage. The apparatus, thus applied, affords perfect security; the surgeon may feel satisfied that no further flooding is to be apprehended, an object of the greatest moment, for here blood is most precious—it is life itself.

Of all methods of plugging hitherto recommended, the above is, in M. Pajot's opinion, the best. The surgeon may, however, be unprovided with lint or agaric, and should know how to take advantage of any convenient substitute; for instance, cotton-wool, soft handkerchiefs, or muslin window-curtains. These are rolled into the shape of

a pointed cylinder, greased, and inserted so as to fill the vagina. M. Gariel's caoutchouc ball is also a handy appliance, which country practitioners should always be provided with.

The plug should be left *in situ* so long as the patient can bear its presence; this is, it is true, a somewhat loose recommendation. Some women cannot tolerate it longer than two hours. The desire to pass water also supervenes, and it is proper, in order to avoid the prompt return of the necessity of evacuating the contents of the bladder, to induce the patient to accomplish this function before the insertion of the plug. In general, M. Pajot removes the dressing after an interval of ten or twelve hours. It may be necessary to extract the pledgets under other circumstances. Thus, labour may have set in, and expulsive pains be present. The plug should then be withdrawn, as it would be expelled, and new indications may arise. If labour does not progress, the bowels and bladder are evacuated, and, if necessary, the plug is reapplied once or twice until dilatation of the os uteri is sufficient to admit of the interference of the accoucheur, should parturition not take place naturally.

ART. 150.—*On the Use of Anæsthetics in Midwifery.* By Dr. B. FORDYCE BARKER, Obstetric Physician to the Bellevue Hospital, New York.

(*Pamphlet*, New York, pp. 24, 1862.)

Dr. Barker is altogether in favour of the use of anæsthetics in midwifery. He maintains that the general condition of the patient for the first few days immediately succeeding labour, "is beyond all doubt much better where the anæsthetic is used than where it is not," and he says that he has never had a patient suffer from headache, delirium, vomiting, and the various other unpleasant sequelæ which have been ascribed to this agent. In a certain class of cases he allows that anæsthetics have the effect of prolonging labour; but he says, "these cases constitute a minority, and even in them, I have not been satisfied that this apparent objection was not more than counterbalanced by the advantages obtained from its use. In the first stage, I have seen but two cases in which it seemed to retard the process of dilatation. In both of these, I felt obliged to continue its use because, if the patient was allowed to come out from under the influence of the inhalation, threatening symptoms of convulsions would at once be developed. Yet for many hours the uterine contractions would seem to be arrested at once by the inhalation of the chloroform. In one the chloroform was used eleven hours during the first stage, and in the other twenty-three hours. The first was delivered by forceps at the end of two hours after the second stage commenced, because the symptoms of eclampsia became more and more marked. In the other, the labour terminated naturally, the second stage lasting five hours and a half. I remained with this patient three hours after the child was delivered. But two hours after I left her she had a violent attack of eclampsia. In the second stage the chloroform seems to retard the labour in a much larger number of cases. In this stage the uterine

contractions are assisted by the action of the accessory muscles, which are partly voluntary, and partly involuntary. These accessory muscles are the abdominal and pelvic, which are brought into action by the pressure of the child upon the irritating structures of the pelvic cavity, which are abundantly supplied with spinal nerves, and thus active reflex action is excited. I am not absolutely certain but that in some instances the forceps have been made necessary from this cause; but I have never yet had reason to regret the use of the anæsthetic on this account."

In the large majority of cases, however (and the opinion is based upon the clinical experience derived from 786 cases), Dr. Barker is convinced that "the use of chloroform shortens labour."

The essay ends with these propositions:

"1st. Anæsthetic aid is of the greatest value in the obstetric art, and chloroform is generally the preferable agent for this purpose.

"2nd. It exerts no injurious effect, when properly administered, upon the health of either the mother or the child.

"3rd. It is perfectly justifiable to use chloroform in natural labour, solely for the purpose of relieving pain.

"4th. It is especially useful in calming the extreme agitation and mental excitement which labour often produces in very nervous women.

"5th. It should be administered in those cases of natural labour, where the progress is suspended or much retarded by the pain occasioned by previous diseases, or such as may supervene during labour, and in those cases where the irregular and partial contractions occasion intense and almost constant pain, but have no effect to advance the labour.

"6th. It is of great service in spasmodic contraction and rigidity of the cervix uteri, in tetanic rigidity of the perineum, in certain forms of puerperal convulsions, and in the various obstetrical operations."

Art. 151.—*On Belladonna as a means of Shortening Labour.* By Dr. B. F. Barker.

(*American Medical Monthly*, Feb., 1862.)

Dr. Barker gives a table of 147 cases of labour, in all of which belladonna had been given for the purpose of dilating the os externum by comparatively painless contractions. The extract was given in one-quarter-grain doses, two or three times a day, commencing about two weeks before the end of gestation. Plethoric patients took tartar emetic in combination with belladonna—three grains of the former, eight of the latter, in two ounces of the syrup of orange-peel, one ounce of the tincture of orange-peel, and one ounce of water; a teaspoonful three times a day. With some the following formula was used: compound tincture of cinchona, three ounces; syrup, one ounce; extract of belladonna, eight grains. Other combinations were prescribed to fill special indications.

A very great difference appeared in the susceptibility of patients to

the influence of the agent, and also a great difference in the purity of strength of the article. One would seem to have double the potency of another, without any corresponding difference in the appearance, colour, or odour. In some cases the dose had to be diminished, but in most instances it could be gradually doubled, or even tripled. Dryness of the throat, slight uneasiness or giddiness of the head, dimness of the vision, are indications to diminish the dose. Not one of the children was still-born, and in none of the cases was there post-partum hæmorrhage, or retention of the placenta. In one the function of lactation was entirely absent; in two others the mammary secretion did not appear until the fifth day.

Art. 152.—*On the treatment of Puerperal Fever.* By M. Cabanellos.

(*Gaz. Hebdom. de Méd. et Chir.*, March 21, 1862.)

M. Cabanellos looks upon quinine as the remedy, *par excellence*, in the various forms of puerperal fever, and he cites seven cases in illustration. In all these cases there was a marked degree of fever, ushered in by rigor in the majority, with general abdominal tension and pain, or else with great tenderness on pressure in the region of one or both ovaries, and eventually a brown tongue and sordes upon the teeth. In two cases there was considerable nausea and vomiting. In six of the cases, Dr. Cabanellos began the treatment with an ipecacuan emetic and emollient cataplasms over the abdomen. On the next day, or the day following, he began to give the quinine, giving from ten to fifteen centigrammes every hour, night and day, with the greatest exactness, and recommending even that sleep should be disturbed during the first two nights rather than that the medicine should not be given regularly. At the same time he persevered with the poultices, gave emollient injections if necessary, and allowed acidulated ptisans *ad libitum*. At the end of twenty hours, the patient experienced singing in the ears, and the frequency of the pulse was diminished. On the third day, it was no uncommon thing for the patient to ask for food, and food was given, without, however, interrupting the regular administration of the quinine, for it was found that no sickness or other disorder of the stomach was ever brought about by the association of the two—food and medicine. From the fourth to the eighth day, the pulse had acquired its natural frequency, but it was not until the non-febrile condition had continued for three or four days longer that the intervals between the doses were materially extended. Twice or thrice it was found necessary to return to the original frequency of the doses, after having given up too soon. Once it was necessary, not only to go back in this respect, but to give larger doses than those which were given at first. The longest time that elapsed before convalescence was fifteen days, the shortest five. M. Cabanellos also says, that he has successfully employed the same mode of treatment in a case of typhoid fever happening in a lady who had been confined fifteen days previously, and also in a case of phlegmasia alba dolens supervening shortly after confinement; and he asks

whether the same mode of treatment would not be likely to be very beneficial in preventing or mastering the febrile condition which is so apt to be developed in persons who have had to submit to surgical operations. These particulars are from a memoir which was read at the Parisian Academy of Medicine, on the 18th of March, 1862.

ART. 153.—*On Puerperal Fever.* By Dr. W. TILBURY FOX.

(*Proceed. of the Obstetrical Society of London, Lancet,* Nov. 23, 1861.)

This paper is intended as an abstract of the history of puerperal fever as it occurred at the General Lying-in Hospital from 1833 to 1858, both inclusive. It appears, from statistical evidence, that 180 deaths occurred out of 5833 labours, giving the very high death-rate of 3·085 per cent. The author maintains, that from the want of a clear understanding of the nature of puerperal fever, much has been mixed up under the head of the latter which was foreign to the subject; that disease in the puerperic takes on an abdominal aspect, and so offers deception; that the history of the childbed fever appears to be a compound of acute specific diseases—local inflammatory conditions — diseases characterised by severe pain and excess of normal reaction; that after eliminating these, the major part of the cases forming true puerperal fever remain, which are explicable, according to the clinical history of the General Lying-in Hospital, by erysipelas; that in tracing the connection between erysipelas and puerperal fever, the different epidemics forms links in the chain of gradation and identity; that all the symptoms of intense puerperal fever are produced in cases in which the most decided evidence of erysipelas alone existed, and therefore the assumption of a special peculiar disease *sui generis* (puerperal fever), is unnecessary; that in the case of primiparæ, lacerations to an appreciable extent being the rule, great facility of ingress and outset, so far as the poison of erysipelas is concerned, is their chief source of liability to attack, which latter appears statistically to be true; that with reference to puerperal pyæmia, it merely forms a feature alike common to all acute specific diseases (most especially, however, of erysipelas), being unaccounted for by the doctrine of phlebitis, of thrombosis, of a pyohæmia, and consisting of a general process of abscess, called into action as a special eliminant, when the ordinary agencies fail to expel a virus, and carried on by a relative process between the tissues (connective) and the blood-current, in which thrombosis is common; and lastly, that much of the mortality is preventible. The propositions are supported by cases.

ART. 154.—*On the Pathological Anatomy of Puerperal Fever.* By Dr. BUHL, of Munich.

(*Froriep's Notizen,* No. 13, 1861; and *Med. Times and Gaz.*, Feb. 1, 1862.

As the result of fifty post-mortem examinations in cases of puerperal fever, Professor Buhl states that a constant and characteristic appearance is a pappy, red or dark-brown or grayish-black mass

lining the inner wall of the uterus, giving forth sometimes a gangrenous, and sometimes a putrefactive smell. It is this matter which supplies the poisonous infection of puerperal fever; but as to the cause of the production of the fever differences of opinion prevail; some regarding it as the consequence of the immediate passage of poisonous matter into the wound, while others think that a preliminary poisoning of the blood by miasmata takes place, the corrupted mass being only a secondary result. Anatomically, we may distinguish two forms of puerperal fever—puerperal pyæmia and puerperal peritonitis—forms which may be clinically distinguished, as it is of importance in prognosis that they should be so.

Puerperal pyæmia does not usually prove fatal before the ninth day, and frequently not until after the third week. It is chiefly met with where the disease does not put on an epidemic form, the veins being the channel of infection; coagula, accompanied by suppuration, being found in the veins of the walls of the uterus, in a pampiniform plexus or in a spermatic vein. In no instance did the author ever find both spermatic veins obstructed, and in only one case was the entire vena cava inferior filled with adherent coagula. These coagula and their subsequent caseous metamorphosis are quite sufficient to establish the existence of puerperal pyæmia, the so-called metastatic abscesses being seldom met with. Œdema of the lungs and ecchymosis of the pleura were frequently met with by the author.

The puerperal peritonitis was more frequent, more violent, and more rapidly fatal than the puerperal pyæmia, inasmuch as death sometimes occurred within two days after delivery, and in but few cases was delayed to the third week. Of the 32 cases of this variety, only 2 were chronic, proving fatal in the course of six or eight weeks. In all the cases purulent exudation was found, in 18 instances occupying the tubes, and in 14 the subserous tissue of the uterus. The two conditions were found combined in only 4 instances, and a plugged condition of the veins was observed only in 5 instances. Of the 18 instances in which puerperal pyæmia occurred, in only 2 was there pus in the tubes, and in only 1 subserous effusion of pus; so that of 20 cases of tubal suppuration, in 18 peritonitis was present, and of the 14 cases of subserous suppuration peritonitis occurred in 13. On the other hand, of 23 cases of purulent coagula of the veins, in only 5 did peritonitis occur, and in all there was subserous or tubal suppuration also, and in 16 cases in which these parts exhibited no pus, no peritonitis took place. The disease of the veins thus bore no relation to the occurrence of peritonitis. It results from these facts, that peritonitis may arise either from the immediate passage of the poisonous material from the uterus through the tubes, or from the conveyance of this from the inner wall of the uterus by the lymphatics. The supposition that the pus may have proceeded from the peritoneum into the tubes, is negatived by the fact of these having been free of it in fourteen cases; and the pus of the periuterine, subserous tissue, or of the lymphatic vessels, must be regarded rather as a consequence than a cause of the peritonitis, inasmuch as it was absent here in twenty instances. The prognosis is not alike in these two modes of origin of the peritonitis. That induced by pus from the

tubes is a much slighter and more simple inflammatory process, met with when there is little or no epidemic extension of the disease; while the peritonitis resulting from lymphatic absorption is a much severer form of disease, preceding or accompanying general infection, and is especially met with in the epidemic form.

In both of the principal forms of puerperal fever, besides the morbid uterine appearances there were found—1. Almost constantly swelling and watery infiltration of the retro-peritoneal, inguinal, and (though seldomer) the mesenteric glands. 2. Osteophytes on the internal surface of the cranium. 3. In several cases, especially in pyæmia and lymphatic absorption, a distension of the cortical substance of the kidney, together with microscopical appearances corresponding to the acute stage of Bright's disease. In only two of fifty individuals was tuberculosis found.

ART. 155.—*On an Epidemic of Puerperal Phlegmonous Erysipelas at Stockholm.* By Dr. RETZIUS, Obstetric Physician to the New Lying-in Hospital at Stockholm.

(*Monatsch. f. Geburtskunde*, vol. xvii; and *Med. Times and Gazette*, April 12, 1862.)

The new Lying-in Hospital of Stockholm was opened in May, 1858, and six months had scarcely elapsed when some cases of puerperal fever occurred, although not in rapid succession. At the commencement of 1859, the cases became more and more frequent, until they constituted 40 per cent. of the admissions, and furnished a mortality of 16 per cent. The health of the hospital improved during the summer, so that the puerperal cases only constituted 3 per cent., and the mortality was reduced to 6·62 per cent. During the months of November and December the cases rose again to 37 per cent., but the mortality kept as low as 6·9 per cent. At the commencement of 1860, the weather was very mild, and the number of admissions to the hospital were far beyond its means of accommodating. As a consequence, erysipelatous inflammations soon manifested themselves, although no analogous form of disease prevailed in the town. At the end of February and beginning of March, phlegmonous erysipelas attacked the upper or lower extremities of several of the patients, little or no pain of the abdomen existing, although the whole surface of the body was exceedingly sensitive to the slightest pressure. The patients' powers became more and more depressed from the commencement to the fatal termination of the affection. The lochial secretion was very fetid and excoriative. Neither constitutional condition, prior disease, present debility, or the prolonged duration of labour seemed to exert the slightest influence on the disposition to become affected by this disease. Until the end of March, only the under-floor of the establishment furnished the cases, this being the part where the midwives are instructed. No woman who occupied a room alone, having a space of 2000 cubic feet, became the subject of the disease. In a room intended for three women, with 1500 cubic feet for each, there were placed, on account of the influx, four women, and therefore with not

more than 866 feet. Seeing the impropriety of keeping women long in such a room, with insufficient means for keeping it cleaned and ventilated, it was closed against these cases. Still there were sometimes placed in it cases of the ordinary peritoneal forms of disease, which all terminated favorably. It was hoped by this closure the further spread of the erysipelas would be prevented, but towards the end of April it broke out again in quite another part of the establishment. Fortunately, the pressure of admissions became slighter, and an effectual cleansing of the rooms and material arrested its further progress. It is a curious fact that during the residence of the infants in the establishment, not one of them suffered from erysipelas, although this is of so common an occurrence when the mother is the subject of puerperal fever. The author was, however, informed that bad erysipelas did attack several children who had been removed to the Foundling Hospital in consequence of the deaths of their mothers from this disease.

At the autopsies, nothing very remarkable was observed with respect to the abdominal viscera, or their peritoneal covering. The uterus was found in a relaxed condition, its inner surface being lined with a fetid, purulent fluid, mixed with coagula, the walls of the organ, on removal of this, being of an ash-gray colour. The substance of the organ was, to two lines depth, loose and pulpous, with the mouths of the vessels gaping. The heart was pale and flabby, coagula being contained in its cavities. There was much stasis of blood, with œdema of the lungs. On making incisions into the diseased extremities, much red serum was discharged from the infiltrated cellular tissue, to which, however, the mortification which had affected the skin had spread only in a slight extent. The muscles were of a pappy softness. The blood-vessels contained no coagula, nor did the walls of the veins exhibit any signs of inflammation, and pus was found only in the spermatic veins. The microscope showed that the colourless corpuscles of the blood existed in an unusually large quantity.

ART. 156.—*Note on the Broncho-pneumonia of Lying-in Women.* By Dr. BARNES, Assistant-Obstetric Physician to the London Hospital, &c.

(*Proceedings of the Obstetrical Society of London, Lancet*, March 15, 1862.)

It has been generally considered that the pulmonary symptoms to which lying-in women are liable—a peculiar form of broncho-pneumonia—are the consequence of the violent straining attending the expulsive stage of labour and of "taking cold." This explanation, according to Dr. Barnes, is far from sufficient. As in typhoid fever, so in puerperal fever, the lungs were apt to be involved. In either case the cause was similar. It was observed that a marked characteristic of typhoid fever was the extreme alkalinity of the blood. The urine he had frequently found highly ammoniacal on voiding. A similar condition commonly marked the blood in puerperal fever. On one occasion the author observed that, the bladder being partially para-

lysed, and the urine consequently retained in the intervals of being drawn by the catheter three times a day, the urine decomposed so rapidly in the bladder as to evolve large quantities of ammoniacal gas, which escaped in a gurgling stream when the catheter was introduced. These circumstances, with others which need not be enumerated, indicated a dyscrasia of the blood which must produce certain irritating effects throughout the body. The diarrhœa of puerperal fever, and the diarrhœa which frequently happens in childbed apart from overt fever, were the simple effect of the irritation of the intestinal mucous membrane by the septic or other offending matter circulating with the blood. Peritonitis arose in the same way. Accompanying this diarrhœa, or apart from it, we might have broncho-pneumonia. This, in like manner, was simply the effect of the irritation of the bronchial mucous membrane or parenchyma of the lungs by the same offending matter. In some of these cases the breath of the patient had possessed an odour distinctly resembling that of the foul lochial discharges. It was by the complication of this form of pneumonic irritation that the author accounted for the fatal acceleration of phthisis after labour. This form of broncho-pneumonia was distinct from that which immediately resulted from capillary embolia.

ART. 157.—*On Thrombosis and Embolia in Lying-in Women*. By Dr. BARNES, Assistant Obstetrical Physician to the London Hospital, &c.

(*Proceedings of the Obstetrical Society of London, British Med. Journal*, March 1, 1862.)

After a few preliminary observations on the importance of the study of the blood in pregnancy and puerpery as a guide to the pathology of child-bed diseases, the author relates a case of thrombosis and embolia of the right leg. The patient was the wife of a surgeon. She was seized with febrile symptoms and apparent inflammation of the uterus a few days after an ordinary labour, and on the fourteenth day with sudden excruciating pains in the right leg, followed by the loss of pulsation of arteries of this leg, swelling, gangrene, and death. From an analysis of thirteen cases of systemic thrombosis and embolia, it is found that the earliest period of attack after labour was the second day; the latest, some weeks. In eight cases, the indication of gangrene arose in less than fourteen days. In eleven fatal cases, death ensued in from eleven days to three months. Two cases recovered. One of the earliest and most striking symptoms observed was the pain, which is described as of a most acute kind. The same characteristic has been observed in non-puerperal cases, and Gaspard and Cruveilhier relate that intense pain always attended their injections of foreign substances into the arteries. Loss of pulsation of the arteries leading to the affected limbs and gangrene next follow, attended with remission of the pain.

The cases of the systemic order are divided by the author into two classes: 1. Those in which rheumatism was an antecedent condition. In these the effects of endocarditis have been found. Here it is

conjectured that the embolism was not so much the result of fresh thrombosis, or coagulation of blood in the heart, as of the washing away into the arteries of portions of vegetations from the valves of the left ventricle. 2. In another class of cases uncomplicated with rheumatism, blood clotted in the left heart; and the local obstructions were the result of the washing of portions of the heart-clot into the arteries.

In connection with the systemic affection, it is necessary to study the thrombosis and embolia of the pulmonic circulation. The comparison of the two systems showed this striking contrast: in the case of the general system, the left heart was known to be peculiarly liable to disease, and the origin of thrombosis was cardiac; whilst in the pulmonic system, it was not the right heart but the peripheral veins that were the primary seat of the evil. In the latter-case, blood-clots were formed in the crural, iliac, uterine, or hypogastric veins; portions of these clots are swept into the right heart, and thence into the pulmonary arteries, where the symptoms of lung distress arise. The author has collected in a tabular form a number of cases of pulmonic embolia.

The theories of the causes of the coagulation of the blood are not dwelt upon. For information upon this controverted question, reference was made to the works of Virchow, Richardson, and Cohn. The memoir was concluded by some remarks on the prophylaxis and treatment of the disease.

ART. 158.—*Two Cases of Rupture of the Uterus, in which recovery took place.* By (1) Dr. JOHN A. BYRNE, and (2) Dr. J. H. WARREN.

1. (*Dublin Quarterly Journal of Med. Science*, April, 1862.)
2. (*Boston Medical and Surg. Journal*, March, 1861; and *Med.-Chir. Rev.*, Jan., 1862.)

1. *Dr. Byrne's Case.*—M. A. Butler, æt. 40, the mother of several children, was admitted 12th September, 1860, into No. 8 Ward of the Rotunda Hospital, Dublin. After having been some hours in labour she was seized with vomiting. On examination the pelvis was found to be sufficiently roomy, but the head of the infant was hydrocephalic. No fœtal sounds could be heard, uterine action had ceased, and there was but little discharge of blood. The symptoms were those of shock, with great abdominal pain and typanitis, and a symptom not generally described, but which Dr. Byrne has met with before—a spasmodic pain passing through the upper part of the sternum and back to the spine. Delivery was effected by craniotomy. One grain of opium was given every hour for some time. Eighteen leeches were applied to the abdomen on the day after delivery, with poultices. Vomiting with prostration continued for some days; rigors occurred on the fifth and eighth days; a purulent discharge from the vagina made its appearance on the twelfth day. On the thirty-seventh day after delivery the patient left the hospital quite well. Examined by the speculum, a ridge of granulations was seen running across and through the os uteri; and this was the only evident relic of the very serious accident from which the patient had recovered.

2. *Dr. Warren's Case.*—The patient, an Irishwoman, æt. 40, had been delivered by craniotomy thirteen months previously. The pelvis was

contracted in the conjugate diameter to 2½". The present labour had been attended with very severe pains, the liquor amnii escaping early. On the occasion of a very violent pain, accompanied with vomiting, she felt something "give way." The pains diminished, but the vomiting continued. Delivery was effected by turning and craniotomy. After delivery there was prostration, with vomiting of dark coffee-ground matter. The hand introduced into the uterus detected a rent sufficient to allow it to pass through. The rupture was in the anterior portion of the cervix and os. The medicine in which trust was placed was morphia. Metritis and fever, with vomiting, continued for three or four days. At the end of a month she had recovered.

ART. 159.—*Case of Twin-birth with Placenta Prævia.* By Dr. SCHUCHARDT.

(*Monatsch. f. Geburtskunde*, Oct., 1861; and *Edin. Med. Journal*, Jan., 1862.)

Few cases of this kind are on record. After a careful search the author has only met with four, of which he gives an abstract in his paper.

CASE.—Mrs. H—, æt. 37, was married in the beginning of 1860, and had had no child previously to my seeing her. She was small, somewhat thin and short; the spine was a little curved, owing to a fall, in the upper lumbar vertebræ, in early youth, but the capacity of her pelvis, as I discovered on subsequent examination, had not been affected. . . . . The placenta of the second child, which was quite separate from the first, lying in the fundus of the uterus, near the entrance of the right Fallopian tube, and the membranes of which formed a sac entirely distinct from the first ovum, was about two thirds the size of the first, had also a circular form, and the cord was inserted almost in its centre. After the womb was emptied the hæmorrhage soon ceased, and the uterus contracted normally. The patient, when again placed in bed, nearly fainted, but on the administration of a little wine and tincture of cinnamon, revived to a certain degree. The whole operation had not lasted quite a quarter of an hour. The first of the children, a boy, was viable, but in spite of every care he died on the fourth day. The second child, a girl, could not be called viable, her respiration continued very imperfect, and she died between sixteen and eighteen hours after her birth.

The patient made a pretty good recovery. Towards the evening of the day of her confinement she fainted. When I saw her, half an hour afterwards, she had come to herself, and was sweating profusely. The uterus was firmly contracted, the lochial discharge was inconsiderable, the pulse was 110, the tongue was somewhat dry in the centre, the breasts were flaccid, and contained little milk. On the following day she was feverish, her skin was hot, her tongue was dry, and her belly was distended and painful on pressure. The next day the feverish symptoms abated, the pain left her, and her only complaint was of great weakness. Under a nutritious diet she gradually regained strength, and at present (six months after her confinement) she is well and strong. Menstruation has been again for some time interrupted.

Art. 160.—*Case of Early Maternity.* By Dr. M'Dowall of Helensburgh.

(*Edin. Med. Journ.*, Oct., 1861.)

Case.—"On the 17th of November last I was called to visit J. W—, a girl æt. 13 on the 4th of July last (according to the record of the family Bible) in consequence of some abdominal enlargement. I soon satisfied myself that the enlargement was due to pregnancy, and intimated my opinion accordingly to the relatives, who received the intelligence with much amazement and doubt. I watched the case from time to time; and as pregnancy is very uncommon at such an early age, I requested my friend Dr. J. G. Wilson, of Glasgow, to see the patient with me, who at once confirmed my diagnosis. On enquiry, I found that the catamenia appeared for the first time in January, and that she menstruated regularly until the end of April. The patient appeared quite ignorant of her condition, and made no complaint.

"On the 11th January, I received an urgent call to visit the girl, and on my arrival I found she had shortly before given birth to a full-grown female child. She could not have been more than three hours in actual labour. I should infer from the way I found the infant lying in bed, that the presentation was natural. I at once detached the child and removed the placenta. The patient made an excellent recovery. The breasts (which had been suppurating previously) healed up, but without any appearance of milk. The lochial discharge was quite natural as to quantity, character, and duration. Four weeks after delivery, the mother and child were transferred to a neighbouring county, and shortly after the child died, I presume from bad nursing. The age of the lad who acknowledges the paternity is nineteen years."

Dr. J. G. Wilson, who reports this case, refers to some other cases of this kind, where confinement took place when the mother was (1) a few months advanced in her twelfth year, (2) 12 years and 7 months, (3) before the completion of the 15th year (in this case full-grown twins), and (4) 15 years and 1 month. He also quotes Dr. Paris to show "that during the year 1816, some girls were admitted into the Maternité at Paris, as young as 13 years; and that during the Revolution, one or two instances occurred of females at 11, and seven below that age, being received in a pregnant state into the hospital."

Art. 161.—*On the removal of a Living Child from a Dying Mother.* By Dr. Esterle, Professor of Obstetrics at the Maggiore Hospital, Novara.

(*Osmodei's Annale*, Nov., 1861; and *Medical Times and Gazette*, April 19, 1862.)

In the present essay, Dr. Esterle brings a very important subject under the notice of the profession, viz., the best means of saving the life of the child when the mother is the subject of a fatal disease. He points out the conclusion to be drawn from statistical researches, that the Cæsarean section, when performed post-mortem, rarely attains this end; and if Lange's figures be correct, it does so to a less and less extent, inasmuch as prior to 1700 as many as 70 per cent. of the lives

of children so delivered were saved. Since 1800 there have been scarcely 2 per cent. rescued. All the information Esterle has been able to acquire from his own inquiries tends to show the rarity of the birth of living children being the result. Precious time has been lost, and before its liberation the fœtus is either dead or so enfeebled as to present little chance of continuing to live. His own procedure consists in delivering the child by the natural passages prior to the death of the mother; but he does not recommend its being indiscriminately carried into effect, and he lays down the following indications and contra-indications:—1. The extraction of the fœtus should be undertaken whenever the parturient woman is in such a condition that her death may be pronounced inevitable and imminent, the child being alive and at a viable age. 2. No operation should be attempted during the last moments of the life of the mother, unless indeed she is in a state of complete insensibility. 3. It should also be renounced when her powers are so exhausted that her death might take place during its execution. 4. When the imminent death of the mother cannot be predicted with certainty, but is only highly probable, we may operate when the procedure, executable without violence, not only is not likely to prove hurtful to the patient, but may even benefit her, and when the nature of the disease or the signs derived from auscultation indicate that the life of the child will be lost. 5. Pelvic deformities contra-indicate the operation in proportion to their degree and the epoch of the pregnancy. 6. The delivery should never be executed without the consent of the patient or of her representative. 7. The determination as to the probability of imminent death should always, when possible, be the subject of a consultation. To the objection that it is an act of cruelty to torment a woman with the pains of delivery just at her last moments, the author replies that it would be still more cruel to allow a child to perish who could be saved without any real aggravation of the condition of the mother, who, too, would almost always be found most desirous that the attempt at saving her offspring should be made. In many of the cases where this means is indicated, the woman is also in a state of complete insensibility.

The procedure will generally consist in the performance of version and extraction of the child, and fortunately it is often found in the last hours of life, without any sensations of the woman having indicated the fact, that the genital organs become so changed in condition as greatly to facilitate the operation; and, indeed, in such cases delivery is sometimes spontaneously in part or quite completed just before death,—Nature almost seeming to indicate the mode in which the child's life should be sought to be saved. Forced dilatation, or, what would be preferable, incisions are therefore rarely required. Where the case is not excessively urgent on the part of mother or child, and when the parts are not sufficiently disposed to allow of delivery being easily effected, they may be rendered so by the introduction of a bladder or caoutchouc filled with tepid water, or labour may be provoked by introducing an elastic syringe within the uterus. In some cases the forceps may be opportunely employed. It will not do to wait until the number and strength of the fœtal pulsations have become notably diminished, when the period of successful interference

may have passed away. Even on the mother's account, too long delay is unadvisable, as leading to precipitancy. In the diseases in which the death of the child ordinarily precedes that of the mother (as cholera, phthisis, hæmorrhage, acute exanthemata, dropsy, cerebral inflammation, eclampsia, syphilitic and cancerous affections, and lead poisoning), promptitude is still more called for. This is especially the case in cholera, although death can here only be predicted as probable; for numerous observations have shown that many pregnant women who have been delivered have recovered, while all, or almost all die who still retain the fœtus in utero.

In conclusion, Professor Esterle refers to five cases which have come under his notice in which this practice was resorted to, with the result of saving three living children; and he refers to Roser's case in which the Cæsarean operation was performed just before death, the child being saved; so that of the six children four were saved, a result incomparably superior to that produceable by the Cæsarean operation when performed after death.

(B) CONCERNING THE DISEASES OF WOMEN.

ART. 162.—*Causes of failure in the treatment of the Uterine Ulcer.* By Mr. ROBERT ELLIS, Obstetric Surgeon to the Chelsea and Belgrave Dispensary.

(*Lancet*, July 6 and 27, Aug. 24, Nov. 2 and 9, 1861, and April 12, 1862.)

Mr. Ellis arranges the principal causes of failure in the treatment of uterine ulcer under the following heads:—

"1st. *Errors of Diagnosis.*—I believe this to be one of the most constant reasons for the ill success and the slow progress of treatment in numbers of cases presented to our consideration. I have known the malignant ulcer—true cancer of the cervix—mistaken for the simple sore, and treated with escharotics, to the sad detriment of the patient. The simple ulcer has also frequently been mistaken for the cancerous, and the sufferer left unaided to struggle with a painful and depressing yet an easily curable disease. The 'indolent' ulcer has been treated as the 'inflamed,' and the patient put to bed for five or six weeks, during which she has been repeatedly leeched. The 'diphtheritic' ulcer is not easily to be mistaken; yet it is liable to be, and has been, confounded with the 'inflamed;' and it is a serious mistake for the patient if it be treated with some kinds of escharotics. The 'fungous' ulcer may also be so trifled with—as if it were a simple and easily curable sore—as to baffle the surgeon and wear out the patient. Of the importance of a right diagnosis in syphilitic ulcer of the cervix—a disease happily very rare—it is unnecessary to speak.

"2nd. *Errors of Treatment.*—Of this, probably all surgeons must be found more or less guilty. Since the instrumental treatment of uterine ulceration is of the present day, we could not but suffer for a time from the want of previous experience and a sound basis of knowledge. But these errors are no longer justifiable; and, the

differing forms of uterine disease being well understood, true principles of cure may be laid down. The application of leeches to a fungous, diphtheritic, senile, indolent, malignant, or specific ulcer, is a mistake which no one ought to make—yet it is frequently made. On the other hand, the administration of wine or high-class tonics —quinine, iron, and strychnia—is a not less serious mistake, if we are treating the inflamed ulcer. The selection of an inappropriate escharotic is also an error of no little moment—the nitrate of silver to the senile, diphtheritic, or malignant ulcer. In some of these cases but little harm may be done; but in nearly all, little or no good will ensue; and in one or two, positive mischief may be the result. A reliance on injections for the cure of any form of uterine ulcer is a most common, and, therefore, a very serious error in treatment. The wife of an officer in the army has just applied to me, who for two years had strong injections of alum and sulphate of zinc administered to her daily, for an indolent ulcer of the cervix, and it has continued unaltered in spite of this treatment; it is probably worse than it was. I have observed, therefore, with regret the introduction of the system of frequent irrigation as a means of cure in these diseases. Disappointment will certainly follow a dependence on such means.

"3rd. *Inefficiency of the means employed.*—It might seem impossible to look at the inflamed, hypertrophied, ulcerated, pus-secreting structures of the diseased uterine cervix, without at the same time being impressed with the fact that no trivial agent would suffice to effect its restoration to a healthy state. Elsewhere in the human body such an ulcer would be pretty sure to receive the firm and uncompromising attention of the surgeon. It is certainly a disease not to be cured—not, at least, soundly cured—by any agents the action of which is merely superficial. What is required is, to substitute healthy for diseased action; and the most rapid method of doing this is cauterization by the stronger escharotics. Even in the use of these a distinction is to be drawn. Potassa fusa is applicable for the melting down of a stony hypertrophy. The acid nitrate of mercury has a caustic and also an alterative action, and is applicable to certain states of the inflamed ulcer. The strong nitric acid, saturated with nitrate of silver, is fit for the treatment of the fungous ulcer, being both a powerful escharotic and an astringent. For milder cases the nitrate of silver, very firmly applied, and allowed to lie for some seconds on the part affected, is useful. These agents have a real power over the cure of these diseases, by the side of which a medicated injection counts for but little. Yet there may be an inefficient use even of these means, powerful though they are. Neglect in removing the ropy discharges will go far to neutralize the action of any one of them,—and there is no neglect more common. Neglect of applying the escharotic sufficiently high up the canal is a most frequent cause of failure. Several cases have occurred to me in which a failure of cure had its origin solely in this neglect, the disease apparently lurking high in the canal, and creeping down after the lapse of a certain time. The constant danger of fracture in using the cylinder of nitrate of silver has often led to its very inefficient employment. To obviate this I have for many years made use of an instrument in which I have

passed a platinum pin through a hollow cylinder of the caustic, and thus rendered it impossible to be broken off. It is thus possible, were it to be desired, to pass the stick of caustic beyond the os internum, and to ensure its safe return. A too frequent cauterization is also a frequent cause of failure coming under this category, and it is particularly observable in obstetric practice at public institutions, at which the attendance of the patients is not so systematic as in private practice. The result is very frequently that the cure is always commencing and never progressing. But, in the long run, the only evil arising out of this is the great prolongation of the time of cure. A most important and common cause of inefficient treatment is to be found in the use of imperfect instruments. Of the caustic-holder I have already spoken. The right form of speculum is not of less moment. I believe the failure of treatment in many cases is in the main traceable to the use of a cylindrical speculum exclusively. The only purpose for which this form of speculum is valuable is in the application of the fluid escharotics, which, but for its protection, are apt to run down and do mischief. It cannot be too strongly insisted upon, that a speculum, to be of real use, must be capable of opening out the lips of the cervix, as by this means alone can the canal be thoroughly cauterized.

"4th. *Neglect of accessory means* constitutes another very common cause of failure. Particularly, I would refer to the neglect of daily injections. The instruments formerly universally recommended for this purpose to sufferers from uterine disease, and still in very general use, are amongst the most barbarous and inefficient that can be conceived. The glass female syringe I have extracted in jagged fragments from the person of one of my patients who had recourse to it, and had broken it in the canal. The syringe of Gooch, and all others similar to it, are loathsome, and as likely to do harm as good. The clean and elegant instrument known as the uterine douche fulfils every purpose for injection, and a steady use of it (in the unimpregnated state) is a powerful aid to the cure of uterine disease. A due attention to the laws of hygiene is not less important; and, most of all, the securing an effectual state of rest—mechanical, and, as far as may be, of physiological rest also. With regard to the use of medicines, it is just possible that here a little neglect may be really wholesome, for the patient has too often been put through all the formularies, and is weary of taking medicine in vain. The state of the bowels, and of the digestive functions, may not, however, be disregarded. It is, of course, perfectly probable that, notwithstanding all neglect of accessories, the patient will still be cured, if she be well managed in other respects. But this is to be remembered—her cure will be longer, will be more painful, and is less safe than under a more perfect system.

"5th. *Imperfect cure* of the ulcer is a constant source of failure to the obstetric surgeon. After a few cauterizations the sore takes on such an improved look that he may think further attention unnecessary. The patient derives a certain amount of temporary good, and is satisfied; but the lapse of a year, often of less, will test the soundness of his work, and he will find to his annoyance that the whole malady has

to be treated over again. The condition of the structures below the ulcer was overlooked in his estimate of the cure, and as the cauterization was not deep enough to modify that, the disease returned. Much pains, patience, and time are really indispensable to the solid cure of this disease; and it is only a loss of all if the surgeon hurry his case to a premature close. It must also not be forgotten, that the ulcer may be lurking high in the cervical canal, and amongst the folds of the arbor vitæ. A thorough cure will generally be a permanent cure."

Mr. Ellis also furnishes an useful table, in which are exhibited the varieties of the simple ulcer of the cervix uteri in the order of frequency, with their diagnostic characters and treatment.

Variety.	Characters.	Treatment.
1. *Indolent Ulcer.*	Cervix hypertrophied, of a pale pink, and hard. Os patulous to a small extent. Ulcer of a rose-red. Granulations large, flat, insensitive, and edge of the ulcer sharply defined. Discharge: mucus, with a little pus, and occasionally a drop of blood.	For a few times the caustic pencil. Afterwards, several applications of solution of silver in strongest nitric acid.
2. *Inflamed Ulcer.*	Cervix tender, hard, a little hypertrophied, hot, and red. Vagina hot and tender. Ulcer of a vivid red. Granulations small and bleeding. A livid red border round the ulcer. Discharge: a muco-pus, yellow and viscid, with frequently a drop of bright blood entanged in it.	Occasional leeching; hip-baths (warm); emollient injections. Then acid nitrate of mercury several times, succeeded by the solid lunar caustic, potassa fusa or cum calce.
3. *Fungous Ulcer.*	Cervix soft, large, spongy to the touch. Os wide open, so as to admit the finger. Ulcer large, pale, studded with large and friable granulations. Discharge: a glairy, brownish mucus, frequently deep-tinged with blood.	At first, the caustic pencil. Subsequently, nit. acid solution of nitrate of silver, or acid nitrate of mercury; electric or actual cautery.

Variety.	Characters.	Treatment.
4. *Senile Ulcer.*	Cervix small, red, a little hard. Ulcer small, extremely sensitive, of a bright-red colour. Granulations very small, red, and irritable. Discharge: a thin muco-pus.	Potassa fusa, or strong nitric acid, with nitrate of silver, once or twice, at *long intervals*. Then, solid sulphate of copper in a pencil.
5. *Diphtheritic Ulcer.*	Cervix of ordinary size; a little hot, dry, and tender. Ulcer covered in patches with a white membrane, adhering closely; irritable, and readily bleeding beneath. Discharge: a thin, acrid mucus, without pus, but occasionally tinged with blood.	At first, electric cautery, potassa cum calce, or acid nitrate of mercury, two or three times, at long intervals. *No nitrate of silver.* Subsequently, stimulant applications—tincture of iodine or sulphate of copper.

ART. 163.—*A simple method of lowering the Vesico-vaginal Septum in the operation for Fistula.* By M. BOURGUET.

(*Bull. Gén. de Thérap.*, Jan., 1862; and *Med.-Chir. Rev.*, April, 1862.)

Dr. Bourguet describes a method of bringing the vesico-vaginal septum within sight and reach, which, in a difficult case related, much facilitated the operation for the cure of vesico-vaginal fistula. The patient was at first placed on her back; then a catheter (Belloc's) was passed into the urethra, carrying the end out by the vaginal orifice. A riband-shaped loop was passed through the eye of the catheter. The instrument was then withdrawn, bringing the ends of the thread with it so as to leave the loop astride between the urethra and vagina. The portion of the loop coming out of the meatus was firmly attached to an elastic catheter; this catheter was then passed into the bladder until the loop came opposite the fistula. Traction exercised upon the loop hanging in the vagina permitted the vesico-vaginal septum to be drawn down at pleasure.

ART. 164.—*Vaginodynia—painful Muscular and Fascial Contractions along the Vaginal Canal.* By Dr. SIMPSON, Professor of Midwifery in the University of Edinburgh.

(*Edin. Med. Journ.*, Dec., 1861.)

At the meeting of the Obstetrical Society of Edinburgh, held Nov. 14th, 1861, Professor Simpson stated that he had lately seen a number of cases, and that he had seen them from time to time for years, where painful muscular or fascial contractile bands existed in the sides

or along the course of the vagina. He had known some of these cases to have been mistaken and treated for various alleged affections of the uterus or its appendages. The pains complained of were, sometimes, principally sympathetic or reflex, and referred to the uterus or other parts, and often aggravated by all movements calling the pelvic muscles into action. He had under his care at present a patient whose chief complaint was a constant disagreeable pain in the sacral region; another who had the same severe kind of pain in the left iliac region; while a third could not walk because of the pain which she felt in the pelvis whenever progression was attempted. In this class of cases the uterus and ovaries would, on careful examination, be found healthy, but a tense, corded, transverse band could be felt at some part of the vaginal wall, and usually, if not always, on one side of it, and placed, as it were, more or less deeply beneath or below the mucous membrane. The band or cord was most commonly placed about an inch above the vaginal orifice. It varied considerably both in thickness and tenseness in different cases. When the cord was touched and stretched with the finger, the patient complained of more or less severe suffering; and this was the pathognomonic mark of the disease. Sometimes the patient only experienced pain at all when the vagina was touched; and these cases usually came under treatment in consequence of being unable to submit to marital intercourse. He had one patient under treatment who could not bear at first to allow herself to be examined vaginally without chloroform, because of the pain experienced from the touch of the finger. Painful and distressing as these cases were, they were very amenable to treatment—division or rupture of the tight and contracted band being usually sufficient to afford complete, and often instantaneous relief; and in the milder form of cases, sedative applications were sometimes sufficient. The method he had usually adopted for the cure of very severe cases of this kind was, after chloroforming the patient, to divide the tight band by means of a tenotomy knife introduced underneath the vaginal mucous membrane. It was a bloodless operation, and had never been attended with any worse consequences than the formation of a thrombus, which had taken place in one patient and had delayed her recovery. He had tried also to effect the object of stretching or rupturing the band by dilating the vagina forcibly with the fingers, whilst the patient was asleep with chloroform. The principle of cure was the same as that employed for the relief of fissure and spasmodic contraction of the orifice of the rectum. But less severe means were occasionally successful. Patients afflicted with this complaint were usually relieved, and sometimes cured, by the daily introduction into the vagina, for a length of time, of local sedatives, such as belladonna ointment and chloroform. A small cup-like indentation was made with the finger in an ordinary belladonna pessary; a few drops of chloroform having been poured in, and then shut in by putting a piece of ointment over the orifice, and then the whole was introduced into the vagina, where the ointment slowly dissolved, and became absorbed along with the chloroform. As to the probable nature of these painful contractions, Dr. Simpson could not supply any very definite answer, but he thought they depended in different cases either,

first, on a kind of permanent spasm of some of the muscular fibres around the vagina, of the same nature as the spasm of the sterno-cleido-mastoid muscle, which produces torticollis; or secondly, they were due to contractions going on slowly in some portions of the pelvic fascia, perhaps resulting from a kind of subacute inflammation, and resembling those often painful contractions of the palmar fascia, which are the acknowledged cause of "crooked-in fingers." Dr. Simpson believed that the common anatomical seats of these painful vaginal contractions were either in the bundle of muscular fibres forming the anterior border of the levator ani, or in the duplicatures or edges of the pelvic or recto-vesical fascia at the points where the vaginal canal perforates the fascia and receives insertions and prolongations from it. These contractions sometimes appeared in patients in whom no previous disorder of any of the pelvic organs could be ascertained to have existed; and he had lately seen one patient who was the subject of it, and who had never been able to allow her husband to approach her, so that in her the morbid condition must have been present before marriage, although she had never been in a position to be made aware of its existence. Instances, however, like this last, oftener belonged to a class of cases where apparently the stricture was not, as in the preceding class, in the course of the vaginal canal, but was situated at its very orifice, independently apparently, in most, of all disease there except super-sensibility and spasm of the sphincter of the vagina, but traceable in others to hyperæsthesia of the mucous surfaces of the vulva or vagina, resulting from irritable eruptions or other mobrid states of these mucous surfaces.

ART. 165.—*On Ovariotomy; the mode of its performance, and the results obtained at the London Surgical Home.* By Mr. I. B. BROWN, Senior Surgeon to the London Surgical Home.

(*Proceed. of the Obstetrical Society of London; Lancet*, March 22, 1862.)

After some preliminary observations upon the operation of ovariotomy, its now recognised character, and the mortality from it being much less than that from many other capital operations, the author alludes to the statistics of Mr. Clay, of Birmingham. He believes that, highly favorable as were the results given, there is good reason for supposing that they would become still more so when the statistics were hereafter collected, subsequently to the period to which Mr. Clay's cases extend—namely, February, 1860. The conditions rendering the operation justifiable are dwelt upon, as well as the difficulty of diagnosis, especially in cases complicated with cancer. Much, however, must depend upon the history of the patient and her family, in arriving at a correct conclusion. Adhesions, at the present time, rarely prove an obstacle to the completion of the operation; they are either broken through with the hand, or divided with the knife or écraseur. When necessary to secure any by ligature, Mr. Brown advises the use of silver wires instead of thread or twine, allowing them to remain within the abdomen after cutting them short and close.

In performing ovariotomy, Mr. Brown advises the pedicle to be

enclosed in a clamp—the ordinary carpenter's calipers—as near to the tumour as possible, and kept externally. The advantages of this method are, that it can be removed in from one to three days; the wound healing quickly, and convalescence ensuing in two or three weeks. If the pedicle prove to be very short, and pain is complained of, the clamp is to be removed in a few hours.

The preliminary measures to be adopted previous to the operation are then described, and their importance shown as bearing on the subsequent results. Amongst others, the author advises the observation of certain atmospheric conditions, and the avoidance of any proceeding when the atmosphere is low and heavy, with an absence or deficiency of ozone, and in that condition generally which we describe as depressing. If greater attention were paid to atmospheric changes, the author thinks that there would be much less of gangrene, pyæmia, low fever, &c., so frequently witnessed after operations.

The after-treatment is also dwelt upon, and finally, an analysis of the cases is given. Ovariotomy, it appears, has been performed nineteen times by the author in the London Surgical Home up to the present time. Of these, thirteen have been recoveries, and six deaths. The details and special particulars of the whole of these cases are given in a series of tables. The ages varied from eighteen to fifty-six. Of the successful cases, eight were under the age of thirty, and five above; whilst of the unsuccessful, one was twenty-one, and five were thirty and upwards. The duration of the disease in the successful cases was from four months to six years; six were within the first year, or ten within two years, and three over the latter period. Nine were single, and four were married, and of the latter, two only had had children. Five had undergone tapping from one to three times. In the unsuccessful cases the duration of the disease was from two to ten years; four were married, three of whom had had families of from three to six children. Four of the fatal cases were tapped from one to six times. The general health was very good in five of the successful cases; in six it was but middling; in one it was shattered, and in another bad. In the unsuccessful cases four had bad health; one was in good health, and another had good health up to six weeks before the operation.

With respect to the operation, the incisions varied from three to seven inches long; in eleven it did not exceed five inches. The tumours were multilocular in eleven, and unilocular in two of the successful cases; in the unsuccessful they were multilocular in four, unilocular in one, and more or less solid in the sixth, containing hair, teeth, bones, &c., and no doubt congenital. Adhesions were found in all except four of the successful and one of the unsuccessful cases. These varied very much, being either very slight and easily broken down, or firm, strong, and unyielding; some were numerous in all directions, requiring to be cut or ligatured. Chloroform was given in all the cases; in two it had to be discontinued, but the patients suffered no pain; in two instances ether was substituted during the latter part of the operation. The pedicle was retained outside of the abdomen in all but two of the cases, the calipers being used for the purpose of holding it. In all the operations performed lately, the

wound had been closed by silver-wire sutures, simply twisted. Of the causes of death in the six fatal cases, in two instances it clearly arose directly from the operation itself: in the other four, conditions were found which chiefly brought about this result; in one case—that of the solid tumour—there was much old disease found; in another, the patient had been a hard drinker, was tapped five times, the belly being filled with forty-five pints of ascitic fluid, independently of the contents of the ovarian cyst, there was softening of the liver, and death occurred in six days. In the other two cases, diarrhœa carried off both—one in eight days, and the other in eighteen after the operation. In one of these, cancer of the duodenum was found, wholly unsuspected during life.

Art. 166.—*Rules for Ovariotomy.*

By Mr. T. Spencer Wells, Surgeon to the Samaritan Hospital, &c.

(*British Med. Journal*, Dec. 28, 1861.)

The observance of the following rules will, Mr. Wells believes, materially assist in securing a favorable result.

1. The operation should be performed in an airy room, the temperature of which should not be below 70° Fahr., but need not be raised to a degree uncomfortable to either patient or surgeon.

2. The patient should be placed in the horizontal position, on a firm, narrow couch, opposite a good light, and be well covered by flannel everywhere except the abdomen and face.

3. She should be spared the fear and shock of the operation, by chloroform.

4. The incision should be made in the median line. It should not pass nearer than two inches to the symphisis pubis, and may commence just below the umbilicus. It may be extended upwards to the left of the umbilicus, and along the median line, as far as may be necessary to expose the tumour and separate adhesions. A large empty cyst may be removed through an incision three inches long; and an incision of five inches is amply sufficient for the removal of very large tumours, provided each cyst be withdrawn as is is emptied, or groups of small cysts be withdrawn unemptied one after another.

5. Any bleeding vessel in the abdominal wall should be secured before the peritoneum is divided.

6. When ascitic fluid surrounds an ovarian tumour, some of it may be allowed to escape; but the tumour should be pressed forward by an assistant, to retain the fluid till the last, as a protection to the intestines. Any adhesions found, whether there be ascitic fluid or not, between the cyst and abdominal wall, should be carefully separated by the hand while the cyst is full, great care being taken not to rupture any cyst. Adhesions to omentum or intestines are better left until the cyst is empty, and the adherent viscera can be seen.

7. As soon as the tumour is freed from parietal adhesions, it should be tapped by a large siphon trochar. As the fluid escapes and the cyst becomes flaccid, it is either to be fixed by a hook and withdrawn,

or drawn over the canula and tied over it, to prevent any ovarian fluid from entering the peritoneal cavity.

8. As the cyst escapes, flannels wrung out of water at 96° are to be carefully wrapped round it, to protect the peritoneal cavity. As secondary cysts are drawn to the opening, they are to be emptied, either by the trochar being passed on through the canula which is still tied within the first empty cyst; or by opening this cyst, passing one hand within it, and breaking down secondary cysts, while the other hand withdraws the tumour as it is emptied.

9. When there is a solid or semi-solid mass, so large that it will not pass easily through the opening, this must be carefully enlarged to the necessary extent.

10. If, as the tumour is withdrawn, omentum, mesentery, or intestine, are seen to be adherent to it, the adhesions must be carefully broken down with the fingers, or divided with the scalpel or scissors. When intestine is so firmly adherent that it cannot be safely separated, the adhering portion of cyst should be cut away, leaving it attached to the intestine, but removing the inner secreting lining membrane of the cyst.

11. Any portion of omentum separated, should be carefully held to see that no bleeding vessel is returned. Any portion which appears to be much altered from the natural condition, or torn in the process of separation, should be cut away; and any bleeding vessel should be stopped by torsion, or by ligature. If by ligature, the ends should be brought out through part of the wound. The ligature should not include any portion of omentum—simply the bleeding vessels.

12. When the whole of the tumour has been withdrawn, it will be found to be attached to one side of the uterus by a pedicle which varies very much in length and breadth, and always contains large blood-vessels. This pedicle is first compressed by the chain of an *écraseur*, or by a clamp, close to the junction of the pedicle and cyst. The tumour may then be cut away, great care being taken so to arrange the flannels that no ovarian fluid can enter the peritoneal cavity.

13. The lips of the wound are then held apart, and the opposite ovary is to be examined. If diseased, it must be withdrawn, its pedicle secured, and the diseased organ cut away. If healthy, it is left undisturbed. A careful examination is then made, to see if there be any bleeding vessel at the spots where adhesions have been separated. Any such vessel may be secured by torsion, or by the pressure of a needle passed across it. Any blood or ovarian fluid in the abdomen or pelvis, must be carefully removed by soft sponges wrung out of water at 96°.

14. The upper part of the wound is now to be closed by passing gilded harelip pins through the whole thickness of the abdominal wall, at intervals of an inch. Each pin should perforate the skin about an inch, and the peritoneum about half an inch, from the incision on either side; so that when the two opposed surfaces were pressed together upon the pin, two layers of peritoneum are in contact with each other. These two layers adhere together very rapidly; prevent pus or other secretions of the wound from entering the peritoneal

cavity; prevent adhesions of omentum or intestine to any part of the inner aspect of the wound not covered by peritoneum; and secure such firm union that a ventral hernia cannot occur after recovery.

15. The peduncle is next to be secured permanently. When the clamp does not drag on it too much, it may be left lying across the wound; but it will often be better to secure the pedicle permanently by ligature, and remove the clamp which had been used to secure it temporarily. Close below the clamp, the peduncle is transfixed by a needle which carries strong twine; and each ligature is so tied as to include a portion of peduncle of about a finger's breadth. One general ligature is then tied tightly around the whole as a security against bleeding from any vessel which may have been punctured. The smaller the portion included in each ligature, and the tighter it is tied, the more rapid is the subsequent process of separation. When the ligatures have been securely applied, the clamp is removed, and any superfluous portion of cyst is cut away; but care must be taken to leave enough beyond the ligature to prevent any danger of this slipping off.

16. When the peduncle is so long that the stump (or portion strangulated by the ligature) can be fixed outside the abdominal cavity, it is to be brought out at the lower part of the wound, and fixed there by a harelip pin, which is to be passed through it as well as through both edges of the wound. It is important that the ligatures should be on a level with the skin, and that the stump should be surrounded by dressing which separates the sloughing tissue from the raw surface. When the ligatures are fixed at the level of the peritoneum, raw surfaces surround the sloughing stump, and a sloughing condition of the wound, or putrid infection of the whole system, may possibly result.

17. When the peduncle is so short that the stump cannot be brought to the surface without great traction upon the uterus, the common practice has been to bring the ligature through the wound, and fix the free ends securely outside. In one case, they were carried through the inguinal canal beside the round ligament, and the abdominal wound was closed. In another, they were cut off short and left, the wound also being closed. It remains for further experience to determine which of these plans is to be preferred; or if only the vessels should be tied, instead of the whole thickness of the pedicle; or if acupressure can be applied successfully; or if it would be safer to trust to the *écraseur*.

18. In whatever manner the pedicle may be treated, the wound must be finally closed by a sufficient number of superficial wire-sutures, to bring the opposite edges of skin into accurate contact; and the wound may be brushed over with collodion, as an additional protection against the fetid sanies which very soon begins to surround the decomposing stump.

19. The patient is then dried, and placed in a warm bed; a hot linseed poultice, or a hot water cushion, is placed over the abdomen; and the whole is secured by a flannel belt, which is kept in its place by a pair of thigh straps.

20. The principles of after-treatment are, to secure extreme quiet,

comfortable warmth, and perfect cleanliness to the patient; to relieve pain by warm and moist applications to the abdomen, and by opiate enemas; to give stimulants, when they are called for by failing pulse or other signs of exhaustion; to relieve sickness, by ice or iced drinks; and to allow plain, simple, but nourishing food. The catheter must be used every six or eight hours, until the patient can move without pain. The harelip pins are removed on the third day, unless tympanic distension of the stomach or intestines endanger reopening of the wound. In such circumstances, they may be left for some days longer. The superficial sutures may remain until union seems quite firm. When the pedicle is kept without, the dead stump and ligatures come away between the third and tenth days; but when the stump is left within the abdomen, the ligatures have remained for several weeks. The putrid sanies which surrounds the stump must be carefully cleansed away; and the wound and surrounding skin must be protected from it by means of greased lint or collodion. The dressing should be covered by a muslin bag containing dry charcoal, or a powder of tar and gypsum, to prevent the appetite of the patient from being affected by any bad smell.

ART. 167.—*Trochar-Syringe for injecting Ovarian Cysts.* By Mr. T. SPENCER WELLS.

(*Medical Times and Gazette*, Jan. 4, 1862.)



The instrument shown in the accompanying sketch has been contrived by Mr. Spencer Wells in order to enable the surgeon to empty large ovarian cysts, inject solution of iodine, and remove it again, if necessary, without any risk of admission of air.

The trochar is fourteen inches long, and is covered by a canula of gum elastic. The trochar is used in the ordinary manner; but as it is withdrawn, the canula is pushed on to the bottom of the cyst. A syringe, a stopcock, and a graduated glass vessel for the iodine, may be so secured that every drop of ovarian fluid may be removed, and the entrance of air is prevented during the escape of the fluid, the entrance of the iodine, and the withdrawal of any portion of the iodine. Messrs. Weiss were the first to make this instrument.

A strong watery solution of iodine in solution of iodide of potassium appears to be preferable to an alcoholic solution. The symptoms, in some fatal cases, have been those of alcoholic rather than of

iodine poisoning. The solution Mr. Wells has generally used has been a scruple of iodine and half a drachm of iodide of potassium in an ounce of water.

When a cyst holds from ten to twenty pints of fluid, from one to two ounces of this solution may be left in the cyst. When a cyst holds from twenty to fifty pints of fluid, it would probably be better to inject eight, ten, or twelve ounces of the solution, so that the whole of the lining membrane may be acted on, and then to remove the greater portion of the solution.

ART. 168.—*A Case of Peritonitis caused by escape of Pus from the Fallopian Tube into the Abdominal Cavity, following on Abortion artificially induced.* By Dr. BARNES, Assistant Obstetric Physician to the London Hospital, &c.

(*Proceed. of the Obstetrical Society of London; Medical Circular*, Dec. 18, 1861.)

The author cites the memoirs of Professor E. Martin of Berlin Howitz, Förster, and Vocke, in which are described cases of peritonitis caused by the escape of pus from the uterus and Fallopian tubes into the abdominal cavity. Peritonitis arising in this manner may be puerperal or non-puerperal. The condition of the uterus and tubes leading to this accident has been described under the names of salpingitis, salpingitis puerperalis, and metro-salpingitis. The prominent symptoms are:—At a stage when involution of the uterus has made considerable progress, the enlarged tubes are perceptible. When escape of pus takes place, sudden acute pain follows, then fever. The quick-ensuing tympanitis may obscure the signs of peritonitis.

The case narrated by the author is, it is believed, the first of the kind that has been recorded as having been observed in this country.

CASE.—The patient had been subjected to some operations, undertaken for the purpose of bringing on abortion. She was shortly afterwards delivered of twins, and died with symptoms of metritis and peritonitis. The post-mortem appearances were described by Mr. Oliver, house-surgeon to the London Hospital. On the lips of the os uteri were three distinct punctures (the result of the manœuvres employed to procure abortion). The mucous membrane of the uterus was covered with pus and disintegrated blood. On slitting up the Fallopian tubes, little masses of pus could be seen at intervals, and in the left tube pus was distinctly traceable into the abdominal cavity.

The author, to whom the depositions taken in this case by the coroner had been submitted, concludes that the pathological changes began in the uterine cavity upon the violent avulsion of the ovum; that inflammation was here set up by the decomposition of the placental remains and of blood; that the inflammation spread along the Fallopian tubes, resulting in the formation of pus, and escape of pus into the abdominal cavity; and that this was the cause of the peritonitis.

ART. 169.—*On Sore Nipples.* By Dr. FORDYCE BARKER, Obstetric Physician to the Bellevue Hospital, New York, &c.

(*Amer. Med. Times*, No. 7, 1862.)

Dr. Barker observes that this term includes a variety of pathological conditions which have not been sufficiently specified by the authors of the numerous remedies which have been recommended in sore nipples. The following is the treatment he has found best suited for these various conditions: 1. *Erosion* of the nipple, or when more extensive *excoriation* is produced by the exposure of the dermis on the removal of the epidermis by the act of sucking. Sometimes little vesicles are formed which become broken, and the scabs which form are detached, constituting what is called *chapped nipple*. From this results entire destruction of the dermis, and exquisitely painful *ulceration*. If the case is seen early enough, and properly treated, the nurse and patient scrupulously following directions, ulceration may always be prevented. In early excoriation, after suckling, the nipple should be carefully dried with soft linen, and then painted over with tinct. benzoin co. three or four times, leaving an interval of a minute or two for each application to dry. This forms an artificial cuticle, which should be renewed after each sucking; and whenever the child will suckle through it, a shield should always be used, care being taken that its base is sufficiently large and elastic not to strangulate the nipple. If ulceration has commenced, at once stop sucking from that nipple. This is absolutely necessary, and the sooner it is done, the sooner will the nipple be healed. Sometimes nursing has not to be suspended for more than twenty-four or thirty-six hours. The breast must be emptied by gentle rubbing only, which can only be done by tact and perseverance, ten minutes being sometimes required to get the first few drops. Then paint over the ulcerated surface twice a-day with a solution of nitrate of silver (gr. x. ad. oz.), and keep it covered with carbonate of magnesia, or, what is better still, calomel. 2. *Fissure or Crack.*—This at the base of the nipple causes intense suffering, and it is sometimes so small that it can only be seen in a good light by bending the nipple over to the opposite side. The bottom of the fissure should be pencilled with a very fine point of solid nitrate of silver, and then covered with collodion. If not associated with the foregoing form of sore nipple or with inflammation, the fissure may be thus speedily cured. 3. *Inflammation of the Nipple.*—This is sometimes a cause, and at others a consequence, of the preceding conditions, and the inflammation frequently extends to the areola. The nipple is conical, red, swollen, and excessively painful. Apply a soft bread and milk poultice for a few hours, and then keep it covered with one or two thicknesses of linen wet in a weak lead lotion (liq. plumb. diacet. 1 oz., aq. rosar, 3 oz). After the inflammation is so far subdued that nursing can be borne without much pain, the following lotion may be substituted for the lead:—Aq. ros., glycerin, āā, ʒij.; acid. tannic., ʒij. Either of the above forms of sore nipple may be associated, or the three may exist together, and then the treatment must be modified or combined according

to the indication. 4. *Eczema of the Nipple* is rarely met with, as Dr. Barker has only seen six cases. Velpeau's ointment, which he states he has never known fail, was also successful in some of Dr. Barker's cases. It is—Ung. aq. rosar., ℥j.; mag. carbon, ℈ij.; hydr. chlor. nitr., ℈j. It requires to be very thoroughly mixed, or it will be lumpy.

ART. 170.—*On the Uterine Douche as a Therapeutic Agent, with the description of a new Instrument.* By Dr. GRAILY HEWITT.

(*Proceed. of the Obstetrical Society of London; Medical Times and Gazette*, March 1, 1862.)

The employment of the uterine douche in the treatment of certain diseases of the uterus is no novelty. The beneficial action of cold water applied by means of the douche to the portion of the uterus accessible to its action from the vagina, in the treatment of chronic leucorrhœa and allied affections, has been recognised by many authorities. But although the principle in question is recognised, it can scarcely be said that the use of the uterine douche is by any means widely practised; in point of fact, it is very rarely employed by the profession at large. One reason why the douche is so little employed is, that there is no ready and efficacious mode of administering it. The various forms of injection apparatus procurable are all more or less open to one of these objections: the quantity of fluid capable of being used is too limited, or manual effort is required, or possession of ingenuity on the part of the patient is essential. In order to administer the douche effectively an instrument is required at once portable, necessitating no mechanical or other effort on the part of the patient, and admitting of the use of a large quantity of water. The fatigue attending the use of ordinary forms of injection apparatus interferes most seriously with their useful employment. The high opinion which the author entertains of the therapeutic power of the uterine douche has induced him to devise an instrument which shall fulfil the necessary indications. This instrument is contained in a box seven inches across and four inches deep. It consists of an india-rubber vessel, folding up like a "Gibus" opera-hat, and from the bottom of which a long flexible tube conveys the fluid. When opened out, the rigidity of the reservoir is maintained by a brass rod screwed in its centre. The reservoir holds nearly a gallon of water, the whole of which can be used at one operation. The action of the douche which is not that of the syphon, is dependent entirely on gravitation: all that is necessary to set in action is, that the reservoir be placed on some object a foot or two above the seat or couch on which the patient is reclining. On turning the stopcock the water flows out continuously, fast or slow as may be desired, through the vaginal tube, until the reservoir is empty. The instrument possesses all the requisite qualities: it is portable, self-acting, and not liable to get out of order. In cases belonging to any of the following categories, irrigation of the os and cervix uteri, which could be most perfectly and easily carried out with the aid of this instrument, will be found of very great service,

—Cases of profuse menstruation, dependent on the presence of a lax condition of the vessels of the uterus, giving rise in many cases to prolapsus uteri; chronic leucorrhœa, proceeding from the same cause; enlargement of the uterus, proceeding from defective involution after pregnancy or after abortion; cases of engorgement of the lips of the os uteri, associated with hypertrophied condition of the mucous membrane and excessive secretion of the mucous follicles of the cervix; in all cases, indeed, in which there is undue fulness of the uterine vessels, or defective tonicity of the muscular fibre generally.

(C) CONCERNING THE DISEASES OF CHILDREN.

ART. 171.—*Intussusception in Children.* By Dr. J. LEWIS SMITH, of New York.

(*American Quart. Journ. of Med. Science*, Jan., 1862.)

At the conclusion of an elaborate paper, founded on the records of fifty cases of intussusception in children, Dr. J. Lewis Smith, of New York, gives the following aphorisms:—

1. Simple intussusception is common in the jejunum and ileum of infants, but intussusception sufficiently grave to constitute disease, or to be attended by symptoms, very rarely, perhaps never, occurs at this age in the small intestines (the small intestines constituting the exterior, as well as the interior of the mass). In children above the age of one or two years, intussusception of a grave and fatal nature does occur, though rarely in the small intestines. 2. With a few exceptions, the seat of the grave form of intussusception, or the so-called inflammatory, is the first part of the large intestine. 3. There is no symptom which will enable us to distinguish, with certainty, intussusception in the small intestine, from that of the colon. The main difference appears to be severe pain, and more constitutional disturbance, less tenesmus, and less abdominal distension. 4. From an analysis of forty-seven cases of intussusception, in which the ages are given, it appears that the period of greatest frequency of this affection is between the third and sixth month, the maximum number being at the fourth month, and there are more cases under the age of one year, than between that age and the age of twelve. 5. Cases reported show an excess of male children affected over female in the proportion of two to one. 6. Under the age of one year, intussusception begins, in most cases, suddenly, in a state of perfect health. Occasionally, the attack is preceded by diarrhœa or constipation, or the two alternately, or by dysentery. Above the age of one year, there is usually, not always, previous disorder of the bowels. 7. Worms are rarely the cause of intussusception, but, in a few instances, it seems to be produced by the irritation of lumbrici or ascarides. 8. This disease, in children, with a few exceptions, commences either with the inversion and prolapse of the lower end of the ileum through the ileo-cæcal valve, or with the invagination of the caput coli in the

colon. The inverted intestine, gradually descending towards the rectum, draws after it the successive divisions of the colon; the veins of the mesentery, or meso-colon, are compressed; circulation is arrested, causing intense congestion of the capillaries, which, in the infant, commonly give way, and occasionally in older children. In rare cases, which are usually protracted to several weeks, the intestine remains pervious, and circulation is not obstructed. Occasionally, the whole invaginated mass is received into the portion of intestine below, forming a double intussusception of great thickness, and necessarily fatal. In a few instances, intussusception begins in the ascending, transverse, or descending portions of the colon. There is, at first, no inflammation in the invaginated mass, but the attrition of its serous surfaces finally causes local peritonitis; general peritonitis does not occur. The containing or external portion of the invagination becomes much pressed together or puckered. Very rarely, the large blood-vessels of the abdomen are compressed by the invagination or by the cicatrisation which follows the process of sloughing, producing serious results. 9. The symptoms are pain—sudden, severe, and at first paroxysmal, but finally more or less constant; vomiting, constipation, or, rarely, diarrhœa; scanty motions of blood in infants, and occasionally in older children; tenesmus; sometimes convulsions; after a few days, a quick pulse, abdominal distension and tenderness, and a haggard and anxious countenance. 10. The location and even shape of the tumour can often be determined by external examination, and a probable, but not precise, idea of its location can be formed by noticing the resistance offered to injections. 11. Cases in which the intestine is strangulated are fatal within eight days. If the intestine continue pervious, and its circulation unobstructed, the child may live for many weeks, if he do not recover. An early death is often from convulsions. 12. In infants the proportionate number of fatal cases is larger than in older children, on account of their greater feebleness, and of the complete and almost immediate strangulation of the intestine, as shown by the bursting of its capillaries. I know of no favorable case of intussusception under the age of one year, while, between the ages of two and twelve, more than one third of the cases reported in the medical journals recovered. 13. There are three modes of favorable termination:—first, the reduction of the displaced intestine, with immediate relief; secondly, a gradual subsidence of the symptoms and return to health, the displaced intestine remaining invaginated, but being pervious, becoming atrophied, contracted or agglutinated, so as not to interfere with digestion or the normal action of the bowels; thirdly, sloughing and expulsion of the invaginated mass. The second method is stated on the authority of Rilliet and other European observers. All who recovered in the preceding collection of cases recovered in the third mode, the expulsion of the mass occurring between the sixth and twelfth days, with an average of nine and a half. 14. There are two modes of death:—first, by convulsions; secondly, by exhaustion. The latter is the usual mode. 15. The treatment is simple. Purgatives are useless, if not injurious. As early as possible, large injections of water should be used. If these fail to reduce the intestine, air should next be thrown into the rectum

by means of a bellows or other contrivance, until the abdomen it greatly distended. If the repeated use of air and water is unsuccessful, we should soon desist from active treatment, and endeavour to sustan the patient's strength till the bowels are reopened by sloughing Opiates should be given to relieve pain and keep in check the serous inflammation, and, when the abdomen is tender, poultices may be employed; but, further than this, our reliance must be on nutritious diet and stimulation.

Art. 172.—*On Infantile Paralysis.*
By M. Chassaignac, Surgeon to the Hôpital Lariboisière, Paris.

(*Medical Times and Gazette*, Nov. 9, 1861.)

M. Chassaignac draws attention to a peculiar form of paralysis which occurs rather frequently in children of two and four years, mostly attacking the upper extremities, and always caused by an external injury, either a pulling of the limb or a fall. The affection always appears suddenly. In fourteen cases observed by him, the paralytic symptoms came on immediately after the children had been violently pulled about by the arms. It is generally an incomplete paralysis, for although the mobility is completely lost for the first two or three days, it soon reappears, although in a lesser degree; at the same time the skin is in an hyperæsthetic condition. The pain which accompanies the loss of power, comes on after the pulling, and is frequently so violent as to cause the child to scream; but this gradually subsides, and is at last only felt when the child tries to move the limb. When the upper extremity is affected, the chief seat of the pain is the edge of the deltoid muscle; if the lower, it is at the exit of the sciatic nerve. The paralysed arm hangs down at the side, in pronation, so that the palm of the hand is turned towards the hip. When the elbow is supported, the hand drops, as in paralysis of the extensors. There is no deformity such as is caused by dislocation, fracture, tearing of ligaments or muscles; neither tumours, redness, increase of heat, nor ecchymosis, and after four or seven days the paralytic symptoms gradually disappear, and the limb regains its former power, and is free from pain. The cause of this affection is a concussion of those nervous plexuses from which the nerves of the extremities take their rise. As the affection disappears spontaneously, treatment is scarcely necessary, but frictions with spirit of camphor, and supporting the limb by a bandage, are useful.

ART. 173.— *On the influence of Abnormal Parturition, &c., on the Mental and Physical condition of the Child, especially in relation to Deformities.* By Dr. LITTLE, Physician to the London Hospital, &c.

(*Proceed. of the Obstetrical Society of London; British Med. Journal*, Oct. 19, 1861.)

Nearly twenty years ago the author endeavoured to show that premature birth, difficult labours, mechanical injuries during parturition to the head and neck where life had been saved, and convulsions following the act of birth, were apt to be succeeded by a determinate affection of the limbs of the child, which he then designated "spastic rigidity from asphyxia neonatorum."

Medical writers seem unaware that abnormal parturition, besides ending in the death or recovery of the child, had also a termination in other diseases. In orthopædic practice alone Dr. Little has met with probably 200 cases of spastic rigidity or paralysis from this cause; and he believes he is now able to form an opinion of the nature of the anatomical lesions and the particular abnormal event at birth on which the symptoms depended.

The state of things in the fœtus at the moment of birth—at the moment of entire withdrawal of placental or maternal circulatory influence—was one of imminent failure in decarbonisation of the blood. If pulmonary respiration were not immediately established, suspended animation, asphyxia neonatorum, took place. This, he infers, is followed by stagnation of blood in all the large venous channels, and inevitable congestion of the capillary systems of the brain and spinal cord; and, if this state be not relieved by respiration, death ensues. The latest writers on the morbid anatomy of still-born children prove beyond a doubt, by their dissections, that punctiform ecchymoses are present, as a rule, on the serous surfaces of the chest and abdomen, besides intense congestion of all the viscera, blood-extravasations between the pericranium and cranium, and on the dura mater, capillary apoplexy, and engorgement of the vessels and sinuses of the brain with blood, in children born dead, whether from interruption of placental or insufficient pulmonary respiration, caused by pressure on the umbilical cord, premature separation of the placenta, and uterine hæmorrhage; also similar ecchymoses on the lungs and heart of prematurely born children who had lived some time.

Through these dissections the author is convinced that mechanical injury to the fœtus was not necessary for the production of the above morbid states. He attributes to the interruption in placental circulation and non-substitution of the pulmonary circulation the internal congestions, capillary extravasations, and serous effusions which corresponded with or produced the symptoms of asphyxia, suspended animation, apoplexy, torpidly tetanic spasms, convulsions of new-born children, and the spastic rigidity, paralysis, and idiotcy subsequently witnessed. His opinion is that asphyxia neonatorum, through injuries to the nervous centres, was the cause of the contractions which originate at birth—more or less general spastic rigidity, and sometimes of paralytic contraction.

The former class of affections he describes as impairment of volition, with tonic rigidity, and ultimately structural shortening in any degree of few or many muscles of the body, varying in effect from the slightest impairment to complete imbecility of mind and body.

He states one fact as common to all the forty-seven cases of persistent spastic rigidity appended to his paper; namely, that some abnormal circumstance had attended parturition, or rather the several processes concerned in separating the fœtus from the parent. There were few if any cases, he believes, of general spastic rigidity referable unequivocally to any illness subsequent to the establishment of proper pulmonary respiration; though spastic contraction of a single set of muscles after infantile convulsions and other illness was an every-day occurrence. Asphyxia neonatorum is very apt to be accompanied and followed by convulsions, as convulsions at or subsequent to birth were only a symptom of lesion of nervous centres, though they might doubtless react on those centres, and thus probably aggravate the disorder. The author has post-mortem particulars of only one of the cases of spastic rigidity he had referred to asphyxia at birth; but he believes that, if examined post-mortem, after living many years, an anatomical condition very different from that present at or soon after birth would be found, and that, although the effused blood might be absorbed, atrophy of the brain, or possibly chronic meningitis with effusion, chronic meningeal hyperæmia, or myelitis would result. This was confirmed by the single case examined after death.

Cases of deformity of cranium, and some frequently described as congenital idiotcy, he attributes to severe lesions caused by mechanical compression and extensive hæmorrhages within the cranium; and in addition to the undoubted instances in which cranial injury and some imperfect development of intellect stood in the relation of cause and effect, he appends cases showing impaired intellect in some in which no mechanical injury had taken place, but in which suspended animation, asphyxia neonatorum, and probably its consequent general and capillary congestion and ecchymosis, capillary apoplexy of the brain as well as of the spinal cord, and, perhaps, a moderate amount of larger apoplectic extravasation, had taken place, and had been imperfectly recovered from.

Affections of the functions of organic life, protracted inability to suck and swallow naturally during the first few weeks of life, the liability to what was classed under the name laryngismus stridulus, he refers to injury at the base of brain and medulla oblongata, such as capillary apoplexy consequent on suspended animation, without previous violence to head and neck. The author mentions cases of death shortly after birth from convulsions and trismus nascentium, recorded by Joerg, Marion Sims, Evory Kennedy, and Doherty, who seemed unaware that some of these cases escape death and become affected with general spastic rigidity. He considers himself justified in referring spastic rigidity following asphyxia at birth to lesion of the spinal cord, as that was the only nervous centre which invariably presented symptoms of lesion in all the numerous cases of injury from abnormal parturition, independent of mechanical injury, appended to his paper. As additional evidence of the dependence of the several

states of the nervous centres upon asphyxia after abnormal labour, the author mentions that recovery from asphyxia from choke-damp and suspension was apt to be followed by cerebro-spinal disease, and that he had found extravasations at autopsies after the asphyxia of Asiatic cholera. He relates also cases of wry-neck and paralysis due to injury at birth.

The paper is illustrated by photographs and a copious appendix of cases.

REPORTS

ON THE

PROGRESS OF THE MEDICAL SCIENCES.

January—June, 1862.

THE intention of the following Reports is to pass in review the principal additions to each department of Medical Science which have been placed on record during the preceding six months. It is not contemplated that they should be confined exclusively to the notice of what is new; any fact or doctrine which may be considered practically useful will, although not strictly novel, be regarded as worthy of commemoration. It must be obvious to all who are aware of the immense mass of information which is almost daily put forth by the medical press of this and other countries, that the notice of every subject would be an impossibility. It therefore devolves upon the writers of each Report to select only such articles for retrospection as may possess superior recommendations, either of an intrinsic character, or in relation to the main end and aim of all medical knowledge—the alleviation of suffering and disease.

I.

REPORT ON PRACTICAL MEDICINE.

On Marriages of Consanguinity. By GILBERT W. CHILD, M.A., Physician to the Radcliffe Infirmary, Oxford. ('Medico-Chir. Rev.,' April, 1862.)

Do facts justify the unqualified condemnation of consanguineous marriages which is commonly pronounced upon them? Few persons have any doubt that they do; fewer still, with Dr. Child among them, would think differently, and answer boldly in the negative. How, then, is this? Wherein is the fallacy, if there be one? In stating his case, Dr. Child directs attention to the account given us of some marriages of this kind in the Old Testament, and he fairly argues, that if the ordinary opinion respecting close intermarriage were correct, the twelve patriarchs, of whom several were the offspring of the third generation of such marriages—the first of them far closer than would be possible now—ought to have reached a very considerable degree of degeneracy, instead of being, as they were, the fertile roots from which proceeded in fourteen generations, a nation of 600,000 fighting men—a nation in all, of no less than 10,000,000 souls. He also shows how the law of marriage, which is on all hands admitted to have provided with especial care for the well-being of the people, contained a provision that all heiresses should marry within the tribe to which they themselves belonged; a provision which was a powerful, though indirect, incentive to the marriage of blood relations. Nay, four heiresses are mentioned as all marrying first cousins in the very case which gave occasion to the enactment of this law.

Dr. Child also examines with care the results of close-breeding among animals—breeding, that is to say, which is so much in-and-in as to leave no degrees of prohibited relationship whatever, the same animal, for example, often figuring as the sire of the second and third, as well as that of the first generation; and he concludes—

(1) That close breeding is not, *per se*, contrary to any "law of nature."

(2) That, as might be expected, *à priori*, it has a tendency to intensify individual peculiarities, and where these are morbidly developed, may lead to degeneration of race.

(3) That unless parents are themselves diseased, close-breeding does not tend to develope disease in their progeny.

(4) That where very close and continued through many generations, close-breeding has a tendency to diminish fertility, and seems to do so by lessening the generative power of the male sex.

Nor do the statistics which have been adduced in proof of the unfortunate influence of marriages of consanguinity upon the offspring, bear the scrutiny to which Dr. Child subjects them. At any rate it must be allowed that as yet these statistics are too scanty to justify the unqualified condemnation of consanguineous marriages which has been based upon them.

"It should be remembered," says Dr. Child, "that all such marriages as those under discussion were and are strictly prohibited in the Church of Rome. This prohibition was first removed in England by the Marriage Act of 1540 in the reign of Henry VIII. It is natural, therefore, that many people at the time should have looked upon this removal of restrictions as a somewhat questionable concession to human weakness, and upon the marriages made in consequence of it, as merely not illegal, rather than in themselves unobjectionable; just as, should the Marriage Law Amendment Bill pass into law, there can be no doubt that many would now look upon marriage with a sister-in-law as a very questionable proceeding in a sociable and religious point of view, although they might possibly be unable to impugn its strict legality. Under such circumstances, nothing is more natural, especially in an age when men were much more open to theological than physiological considerations, than that they should attribute any ill effects which might seem to follow from such unions to the special intervention of Providence. Such ill effects would be marked and noticed whenever they occurred, and would soon become proverbial; and when, in a later age, men began to pay more attention to the breeding of animals and found that excessively close breeding seemed in some cases to produce similar results, they would be led to establish a false analogy between the two cases, and so infer the existence of a law of nature which close breeding and consanguineous marriages equally infringed.

"Something like this I conceive to be the true history of the common opinion upon this subject; an opinion which, as far as I can discover, rests on no satisfactory record of observed facts.

"It remains now only to state what I believe to be the natural results of the marriage of blood relations, and to show under what conditions it is likely to be mischievous, and under what harmless, or even beneficial; and this I shall best do by supposing a case by way of example. Let us suppose a grandfather, A, who is afflicted with some form of scrofula. The scrofulous diathesis descends to his two sons, B and C. B has two sons, D and E. C has a daughter, F, the latter of course first cousin to D and E. D marries into another family, unconnected in blood, and free from any scrofulous taint; E marries his cousin, F. In this case, clearly, the chance of D's children being healthy is infinitely greater than that of E's; but the reason is, not because E married his cousin, but because he married one in whom the same cachexia was latent, as in himself, and latent, too, in a constitution, probably, in many respects the counterpart of his own. Here, too, is a case in which the analogy of the lower

animals does in its degree apply; for, just as breeders expect and very often succeed, by close interbreeding, in reproducing a great variety of the peculiarities of a single individual, so in the case I have supposed we shall be likely to get, not only the tendency to the same disease, but likewise the same general constitution of mind and body—the same or similar idiosyncrasies.

"Let us now suppose, on the other hand, the grandfather and his two sons, and their respective wives, to have been free from any such taint of cachexia, and that we have the two grandsons, D and E, and the grand-daughter and cousin, F, all sharing this normal and healthy constitution. Now, if D marry into a scrofulous family, and if E, as before, marry his first cousin, F, there can, I think, be no doubt that the chances of healthy offspring will be almost the reverse of what they were in the former case. There will be every reason to expect the children of the cousins to be healthy, though they will no doubt present family peculiarities strongly developed; while there will be great danger of scrofula appearing in the offspring of D, albeit he has not married a blood relation. Still the risk run by D, in the second case, is much less than that incurred by the cousins in the first.

"These two cases, as I have put them, are no doubt strongly marked; and we should hardly expect to meet with the exact counterpart of either of them in actual practice; but to any one familiar with disease, and observant of family resemblances, a variety of modifications of them will at once occur, and cases more or less like them are met with every day. They serve to illustrate the following propositions, with which I conclude my paper.

"I. That the marriages of blood relations have no tendency, *per se*, to produce degeneration of race.

"II. That they have a tendency to strengthen and develop in the offspring, individual peculiarities of the parents, both mental and physical, whether morbid or otherwise; and therefore in practice they often do induce degeneration.

"III. That there are some cases in which it would be actually safer (as far as the chance of healthy offspring is concerned) for a man to marry a blood relation, than a woman not so related with whose family history he was unacquainted.

"IV. That by means of a proper regard to known facts relating to hereditary transmission, a physician may predict with great accuracy the probable result, as regards the health of the offspring, of a marriage of blood relations in any particular case, if only he be sufficiently acquainted with the hygienic history of the family.

"Hence in those cases in which a physician is consulted on such a matter, it is his duty, not, as some have asserted, to save himself all trouble by denouncing the match, but to discover as far as possible the conditions of the particular case, and to give his opinion according to the results of his inquiry."

These, which are Dr. Child's concluding remarks, form the most fitting conclusion to a very imperfect notice of an admirable memoir.

"*What is a Man's Security against Smallpox?*" By Dr. DRUITT. ('Medical Times and Gazette,' December 14th, 1861.)

Dr. Druitt asks our assent to this proposition:—Whoever can take smallpox can also take the vaccine disease. Whoever cannot take the one is also protected from the other. The greater the susceptibility of any person to one, the greater it is to the other also. There appear to be some persons so constituted, that they resist the vaccine disease. There are likewise some so constituted that even unvaccinated they never take smallpox. Conversely, they who are susceptible of smallpox are so to the vaccine influence. A man who has had smallpox once is liable to it again, just as in the same degree as if vaccinated he would be liable to the vaccine disease again, while some persons are liable neither to one nor to the other. If this proposition in its various forms be true, it suggests a caution.

The statistical report of the Army Medical Department for 1859 contains some tables which afford materials for the following calculations, which illustrate what Dr. Druitt wants to point out. It seems that 32,510 soldiers and recruits were vaccinated during fifteen months from October, 1858, to December, 1859. These are divided into four classes: 1. Those who bore marks of previous smallpox, amounted to 4124. Curious this, that an eighth of the flower of our male adults of the working classes should still be marked with smallpox! 2. Those who bore good marks of previous vaccination, were 32,924, or about three fourths, which is on the whole satisfactory, and tells a good tale for the vaccinators. 3. Those who bore doubtful marks of previous vaccination were 1901; and, lastly, those who bore no marks of previous vaccination nor smallpox, were 2561.

If we reduce these numbers to a uniform scale, we find that of the 32,510 soldiers vaccinated,

Those who had smallpox marks were	per 1000	126
„ „ marks of good vaccination		736
„ „ doubtful marks of vaccination		58
„ „ neither vaccine nor smallpox marks		78

This gives a valuable, and, on the whole, satisfactory account of the state of our labouring population, so far as regards vaccination. It may be presumed that in higher ranks there are none without vaccine marks.

Now, when we come to the results of the vaccination of these 32,510 persons, if we were to go by the common theory, we should expect that the persons who bore marks either of smallpox or of good vaccination would almost uniformly be insensible to the fresh infection, and that the persons with doubtful marks, or none, would uniformly take the vaccine well. How curiously we should be disappointed is evidenced from the following statement:

Out of the 4124 persons with marks of smallpox, the number who when vaccinated showed perfect vesicles was 1473, or per 1000 .	357
Modified vesicles were shown in 799, or per 1000	193
A failure in 1852, or per 1000	440

Secondly. Out of the 23,924 persons with good existing vaccine marks, the number who when re-vaccinated exhibited perfect vesicles was 8976, or per 1000 375
The number who gave modified vessels was 5277, or per 1000 220
A failure in 9671, or per 1000 404
Thirdly. Out of the 1901 persons with doubtful marks of vaccination, the number who gave on re-vaccination good vesicles was 777, or per 1000 408
The number who gave modified vesicles was 505, or per 1000 265
A failure in 619, or per 1000..... 325
Fourthly. Out of the 2561 persons who had marks neither of smallpox nor of vaccination, and who (by common theory) might be supposed quite unprotected, the number who gave perfect vesicles was 1362, or per 1000 532
Those who gave modified vesicles were 484, or per 1000 189
A failure in 715, or per 1000..... 235

These tables, compared with those of the results of re-vaccination in the Wurtemberg army, show us pretty exactly what is the amount of protection against smallpox actually existing in the case of the male adult population, assuming, as we are bound to do, that protection against smallpox and insusceptibility of vaccine disease are identical. Out of any number of men who have smallpox marks, the number protected is 44 per cent., while 56 per cent. are still liable to it in some form or other. The figures yielded by the Wurtemberg statistics are identical—44 and 56—and, therefore, these proportions point to something like a law.

Out of any number who show good vaccine marks, the per-centage absolutely protected is 40 or 41, whilst 59 are in some degree liable. Here, too, the figures of the Wurtemberg army are identical—40 and a fraction and 59 and a fraction; so that this looks like a law.

Out of any number of men with imperfect or doubtful vaccine marks, the per-centage of protection is 33, whilst 66 are liable. (The Wurtemberg figures give 46 as the number protected.)

Out of any number of unvaccinated men who have never had smallpox, only 23 per cent. are insusceptible, 77 are liable. Here, too, the Wurtemberg tables differ, giving 47 as the per-centage of protection.

In the foregoing observations it is assumed that vaccination has never been repeated.

From these data, and others before the profession, Dr. Druitt argues, we shall surely be justified if we drop a little from the unqualified tone in which it is customary to speak of vaccination, as if it were an absolute protection, and as if it ever could exterminate smallpox. And by being careful to define its true value, we should not run the risk, which we do now, of damaging vaccination, and producing reaction against it in the vulgar mind, because it does not effect all that we promise of it.

Dr. Druitt has repeatedly met with such histories as these:—A youth, aged fourteen, was taken ill with smallpox. After three weeks his three brothers sickened of it likewise. All had been *well* vaccinated, but the only one who had it *severely* was one who had been vaccinated by a well-known public vaccinator in Marylebone, who pronounced the "arm" a remarkably fine one, and, in the excess of his zeal, said to the mother,

"Well, madam, if ever your child has smallpox after such an arm as that, I shall call vaccination a humbug." A conclusion which an uneducated person would be very liable to adopt.

Surely it would be better to state frankly that vaccination is proved to hinder smallpox from destroying life, good looks, and eye-sight; but that if 1000 vaccinated boys grow to manhood, 600 of them will still be liable to a modified attack of smallpox, unless they are vaccinated again.

Then, if asked, as we often are, "Would it not be better to have smallpox at once?" The reply will be, that smallpox gives but three per cent. more protection against a second attack than vaccination does.

It must also be borne in mind, that some persons are so constituted that they take vaccine and smallpox readily, again and again. The figures at command are too small to prove it, but there is little doubt that every case of death from smallpox after vaccination, may be matched by one from secondary smallpox.

Others take them with the greatest difficulty. Hence some little prudence is requisite in speaking of "imperfect" vaccination and ill-developed cicatrices. These are due to the insusceptibility of the patient, rather than to the unskilfulness of the operator. If once good vaccine matter be inserted, the result, whether a good cicatrix or bad, is out of the operator's control.

The sum of Dr. Druitt's argument is, that the susceptibility to smallpox and to vaccine being equal, and the protection afforded by either being incomplete, the public should be frankly enlightened on this latter point, and should be encouraged to repeat vaccination periodically. Systematic National *re*-vaccination is almost as much a necessity as the primary operation.

On the Cretin-establishment in the Obendberg and the Necessity for collecting Statistics of Cretinism and Idiotcy throughout Europe. By Dr. Güggenbuhl. ('Comptes Rendus', t. li, No. 24, 1860.)

On the International Registration of Cretins and Idiots. By Dr. Güggenbuhl. ('Social Science Journal,' June, 1862.)

Cretins and idiots! Is it possible to evoke soul and mind, and reasonable activity in creatures so miserable? It may be possible to do much in the way of prevention, but in the way of cure surely their case is a hopeless one. Ignorant of what has been done during the last twenty years at the Cretin-establishment at the Obendberg, near Interlachen, and at the various idiot-asylums, which, after the example set in this establishment, have sprung up here and there in various countries, any one whose only knowledge of the case is derived from a sight of what may be too often seen in the Alpine regions of Switzerland and elsewhere, may well be hopeless as to the possibility of anything being done in the way of cure. But however incredible it may seem, there is in fact much to be done in this direction. For what are the facts? The facts are—that all the cretin inmates of the establishment at the Obendberg are greatly benefited by the treatment of Dr. Güggenbuhl, and

that fully one third of them become useful members of society. In illustration of this latter fact, take the one case which is related in the communication to the Parisian Academy of Sciences.

CASE.—F. M—, a native of a village in the Bernese Oberland, and the youngest of four children, all cretins. His parents were of average intelligence, but his mother had goître, and his father was a drunkard. Birth had been unattended with any difficulties. He was three years of age before he walked; and at the age of six, when he came under Dr. Güggenbuhl's care, he could hardly pronounce a single word. At this time the head was of hydrocephalic dimensions, and the body and limbs stunted and withered. The face was pale, the muscles were soft, the tongue was thick, the skin cold, the temperature low, the respiration four times slower than it ought to be, the intelligence *nil*, the obstinacy extreme. Several months passed away before he could be taught to distinguish the fingers from the hand. After three years of treatment, F. M— was able to read and write; but, from time to time, he relapsed into his primitive state of stupidity, and for days together he would forget even the letters of the alphabet. From this time he rapidly gained ground, and for some time before he left the establishment he filled the office of secretary to Dr. Güggenbuhl, writing from dictation, and with correctness, not only German, which was his mother-tongue, but also French and English. How many years he was in Abendberg is not stated; but it is stated that he left about twelve months ago to enter a seminary at Glay, in the Department of Doub, in France, with a view to qualifying himself for being a schoolmaster in his native village.

The treatment pursued at the Obendberg in this and similar cases is twofold. The first thing of all is to strengthen the system by ordinary medicines, as steel, cod-liver oil, zinc, phosphate of lime, and so on; by exercise in the open-air, and particularly in the sun; by carriage exercise; by working in the gardens and farm; by gymnastics; by nutritious diet; and so on. Tepid aromatic baths, frictions, and electricity, also figure conspicuously as means of cure. After all this comes the "*cure pédagogique*," the chief end of which is to rouse the dormant senses by appropriate stimuli, colours, sounds, &c. The pupils, for example, are taught the letters and many things besides by taking them into a dark room and writing with phosphorus upon a board. The aid of music is also called in to develope the faculty of speech, the pupils singing or droning themselves into speech, often with an organ to co-ordinate the whole. Attention once excited, victory is certain in the end, and a rainbow or the glorious "morgen-roth" on the brow of the neighbouring Jungfrau is said to have been, in many instances, the first occasion of this excitement. All the exercises begin and end with prayer, and experience has shown that the heart of the cretin is not slow in seeking and obtaining the blessings of religion. Progress is, no doubt, slow, and much patience is required, but in from four to six years a reward, often a great reward, is sure to follow, provided the cretin be not over six years of age when the treatment is begun, and provided also the case be uncomplicated with convulsion.

It is, however, less with a view to call attention to what has been done, and what may be done in the cure of cretinism, than with a view to urge the necessity of systematically examining the statistics of cretinism and idiotcy throughout Europe, that Dr. Güggenbuhl addresses himself

to the Academy of Sciences in Paris and to the Association of Social Science in London. It is with prevention rather than with cure that he is concerned. What he wants, indeed, is fuller information respecting the history of cretinism, which is necessary to the adoption of effective preventive measures—information respecting the state of the atmosphere, with respect to electrical and other matters, the presence or absence of malaria, the state of the waters as to the presence of lime, iodine, fixed air, &c., the geological structure of the place, its elevation above the sea, the precursory symptoms in man or in the lower animals, the proportion of hereditary and acquired cases, the prevalence of opium-eating, drunkenness, &c., the general health of the neighbourhood, and so on—all those points, indeed, to which a sound knowledge of hygienic matters naturally points.

—We strongly sympathise with Dr. Güggenbuhl, and wish him God-speed in all his philanthropic labours. We are also glad to find that he is rapidly overcoming the active and passive opposition of which he has had his full share, and that his great claims upon the thanks of society are being recognised on all hands by one mark of confidence and distinction after another. A visit to the Abendberg would satisfy anyone that few men have higher claims than Dr. Güggenbuhl to be considered as a true benefactor to suffering humanity.

The recent Epidemic of Diphtheria. By Mr. J. N. RADCLIFFE. ('Trans. of the Epidemiological Society of London,' Feb. 3rd, 1862.)

The history of the recent epidemic first commences with the years 1848-49.* Prior to this period, diphtheria had been occasionally observed as a sporadic affection in various parts of the kingdom; and in the middle of the last century the disease, known by other designations, had prevailed in an epidemic form in several districts, as well as in France, Italy, Sweden, Holland, Germany, and North America. In both 1848 and 1849 cases of diphtheria had been observed in St. Thomas's Hospital, in the metropolis;† and in one or the other years cases had also been noted in Herefordshire,‡ at Barton-under-Needwood, in Staffordshire,§ and about the same period in the vicinity of Yarmouth, in Norfolk.‖

In the autumn of 1849 and winter of 1849-50 the disease prevailed in an epidemic form at Haverfordwest, Pembrokeshire. This outbreak is the first known occurrence of the disease epidemically in any district of the kingdom within the present century. Mr. J. D. Brown, a general

* Cases of diphtheria were observed at Sittingbourne, in Kent, in 1845, by Dr. Keyworth, of Shrivingham (2nd P. C R., p. 182); and Mr. Jambden, of Coningsby, Lincolnshire, states that he "has seen a case or two of diphtheria annually, since he commenced practice in Coningsby, and there are traditions among the country people of the occurrence of precisely similar cases as long ago as 25 years." P. C. R., p. 179.

† Dr. Keyworth, Sittingbourne, Kent. P. C. R., p. 182.

‡ Dr. Russell, of Birmingham. P. C. R., p. 182.

§ Dr. Webb. P. C. R., p. 174.

‖ Mr. Cooperof Cromer. P. C. R., p. 184.

practitioner of Haverfordwest, writing to the 'Medical Times and Gazette,' vol. xxii, p. 670, on the subject of diphtheria, towards the close of 1850, says:

"I have had the misfortune to see a great deal of it during the last autumn and winter in this town, where it broke out as an epidemic and continued till the spring of 1850, and must have met during its origin with at least 200 cases, forty of which were fatal.

"Its approach was often insidious, commencing generally with slight huskiness of voice, loss of spirits and appetite, but seldom or never any pain in swallowing. In this early stage, and often not at all during its whole course (?), parents would often wonder at the idea of there being anything at all dangerous the matter with their children, when, perhaps, at the same time, the pharynx was perfectly coated over with false membrane, and the tonsils alarmingly swollen. In another hour or two all hope would be over, from extension of the disease to the larynx and œsophagus. In the severest cases the attacks were often suddenly alarming, commencing with vomiting and shivering, loss of appetite, and general disturbance, without any throat affection as yet, which perhaps would not appear for four or five days, the stomach having evidently shown symptoms of the disease from the first. In all those cases the larynx was always simultaneously affected with the pharynx, the croupy symptoms being severe. Such cases were invariably fatal.

"In its course it was very uncertain. Some of the little sufferers appeared to get through easily, others lingering for weeks with slight but still deceitful symptoms. The child would play, almost with every evidence of perfect health, and enjoy the little sports of childhood as usual, when all at once the breathing would become croupy, the respiration laborious: the pharynx is attacked! The chances are now fearfully against him. No treatment seems to check it. Time is short, as every minute exhausts life. I have seen them die in four hours after such sudden invasions; they may linger four or six days, with deceitful intermissions of sometimes eight or twelve hours' duration. The croupy symptoms would suddenly cease; the little sufferer would sit up, smile, eat, drink, amuse itself; the delighted parents would point to him with admiration of your skill; the sonorous breathing which to you told too plainly, at your last visit, that death was there, has disappeared; and, off your guard, you join in the general joy, and stamp it by pronouncing him safe. Mark! such sudden changes are never to last—it is sure to return. When recovery is to take place, the changes are slow, hesitating and doubtful, for hours and days. Perhaps not more than four hours have passed—you are sent for—the frightful symptoms have returned—generally at night—all now is over—the case is clearly hopeless."

In two cases in which Mr. Brown had the opportunity of examining the bodies after death, he found that "the pharynx, tonsils, larynx, trachea, and bronchial tubes, were more or less coated with false membrane, the larynx and trachea were thickly coated, the stomach showed symptoms of great irritation also."

In 1851 several cases of diphtheria (three children in one family, two of whom died) were observed in the vicinity of London (Blackheath); in 1851 and 1852 several cases again occurred at Barton-under-Needwood, a lovely village situated on the eastern boundary of Staffordshire, and

very near the centre of the kingdom; in 1852, twenty-four cases, some fatal, are stated* to have occurred at Lifton on the Tamar, in Devon; in 1854 a typical case was noted in the General Hospital, Birmingham; in July, 1855, Dr. Druitt saw two cases of the disease in Piccadilly;† and in September of the same year diphtheria broke out at Launceston, in Cornwall, and prevailed epidemically—the acme of the outbreak occurring in August of the following year.

It is an interesting fact that the two localities—Haverfordwest, and Launceston—in which diphtheria first manifestly assumed an epidemic character, are both situated in the two most westerly counties of the kingdom; and that the quasi-epidemic group of cases observed by Mr. Dodge, of Clifton, occurred in the district adjoinining Launceston, on the east.

In the winter of 1855-56 (January, 1856), five fatal cases of diphtheria occurred at Bromford Forge, near the river Tame (Erdington) in Warwickshire; and in the summer (June), of 1856 the disease broke out in a severe form at Beccles, in Suffolk,‡ appeared at Whalpole Drove (July), a village ten miles from Spalding, in Lincolnshire, and at Leek (July) in Staffordshire, a town some thirty miles north of Barton-under-Needwood, and several cases occurred in Birmingham (August). In autumn of the same year, the disease showed itself at Newick, in East Sussex (October), and at Ash near Sandwich (November), in Kent; and in the winter following (1856-7) it appeared also at Rotherfield and Canterbury, in the last-named county.§

In the first five months of 1857 diphtheria was prevalent in Birmingham, where several cases had occurred during autumn of the preceding year; and in the summer of 1857 the disease appeared at Wolverhampton, in Staffordshire, also at Anwood, in the same county. The disease also showed itself, for the first time, at Apsley Guise, in Staffordshire, at Hetching (July), Uckfield (July), and Mayfield, in Sussex; at Stratford, in Norfolk; St. Mary Cray, Kent; Colchester, Essex; and Teignmouth, in Devon. In the autumn the first case of the epidemic was observed at Spalding, in Lincolnshire (September), and the disease also first occurred at Dudley, in Worcestershire; West Bromwich, in Staffordshire; North Waltham, in Norfolk; at Chatham,‖ and Bruckley, in Kent; East Holtsby, in Sussex, and at Bolton-le-Moors, in Lancashire—the earliest record of the disease in the northern counties; and noteworthy as occurring in one of the westernmost.¶ In the winter of 1857-58, the disease was observed at

* On the authority of Mr. Doidgt, Univ. Med. Officer. P. C. R., 244.

† Lady B— and maid. 'Sanitary Review,' vol. i, p. 361.

‡ Mr. Crowfoot, 'Sanitary Review,' vol. ii, p. 302.—"A severe form of diphtherite affecting primarily the mucous membrane of the pharynx, and in many instances extending to the larynx."

§ Seven cases of "diphtheritic inflammation of the fauces and tonsils" came under the notice of Mr. Reed. 'Sanitary Review,' vol. iii, p. 89.

‖ This is doubtful, probably earlier cases.

¶ 'Sanitary Review,' vol. iii, p. 414. Mr. Pendlebury, of Bolton-le-Moors, recites "several cases of the disease, lately noticed in the county of Essex, have been observed, but of a milder form. At the outset, these cases resembled ordinary quinsy, accompanied with great debility and general *malaise*; but the tonsils (on the second or third day), instead of suppuration, exhibited superficial brown sloughing patches."

Ashford, in Kent; Stourbridge, Worcestershire; Odiham, Hampshire; and at York.

In January, July, and March, 1858, the epidemic was at its height in Birmingham, and early in the year, according to some, but late according to others, the disease appeared at Nantwich, in Cheshire. New centres of the epidemic were manifested in February, at Dudley, in Gloucestershire, and at Liverpool; in March, at Stalham, in Norfolk; in April, at Lowestoft in Suffolk, and Portsmouth; in May, the epidemic broke out generally at Spalding, in Lincolnshire, and reached its acme at Coningsby in the same county, and first appeared at Lincoln; and in June the disease showed itself at Witham in Essex and Sudbury in Suffolk; while in the summer, autumn, and in December of the year, its presence was reported from one or more localities in every county in the kingdom except Buckingham and Oxford of the south-eastern counties, Hereford and Shropshire of the west-midland, the four northern counties, Cumberland, Durham, Northumberland, and Westmorland, and the Welsh counties.

In the course of 1859 the epidemic manifested itself in all parts of the kingdom—the Registrar-General's returns of mortality for that year showing deaths from diphtheria in every county of England, and in North and South Wales.

Adopting these facts, trustworthy doubtless as far as they go, it would appear that—

1. Diphtheria first showed itself in an epidemic form in South Wales, and the south-western counties, and subsequently, but still prior to the general outbreak of the disease, in the eastern counties.

2. The general outbreak was preceded by at least four local outbreaks, at intervals (from the general outbreak) of seven (South Wales), five (Upton, on the Tamar, Devon), two years (Launceston, Cornwall), and of one year (Beccles, Suffolk).

3. The earlier of these local outbreaks occurred in districts nigh the coast in the western and south western provinces of the kingdom; the later outbreak in a district adjoining the eastern coast (Beccles, Suffolk). In fact, the epidemic was earliest manifested in the coast provinces on opposite sides of the kingdom, the westerly having the priority in time.

4. Contemporaneously with the manifestation, and in the intervals of the local outbreaks, scattered cases of diphtheria were observed in the eastern and south-eastern, north and west-midland, and metropolitan counties.

5. With one exception (the cases observed at Barton-under-Needwood, Staffordshire) the examples of sporadic diphtheria recorded between 1848 and 1856, all occurred in districts which early became centres of epidemic manifestation of the disease.

6. The order of epidemic manifestation of the disease, in point of time, in the different districts of the kingdom, after 1855, was:

In 1856.

1. The west-midland counties.
2. The eastern counties.
3. The south-eastern counties.
4. The north-midland counties.

In 1857.

5. The south-midland.
6. The north-western.
7. Yorkshire.
8. The metropolis.

In 1858.

9. The south-western counties.

In 1859.

10. The northern counties, Monmouth and Wales.

It would follow, then, from these conclusions, that the impression first entertained,* that the epidemic earliest showed itself in the south-eastern counties, and travelled from thence, as a centre of infection, from station to station over the kingdom, does not hold good on a more accurate acquaintance with the first beginnings of the epidemic. The support which this belief was supposed to give to the theory that the chief agent in the propagation of the epidemic was contagion, also falls to the ground with the belief itself. Subsequent observation, moreover, has clearly shown that contagion plays but a very limited part in the epidemic extension of diphtheria.

The fact, however, that the belief in contagion being the great agent in the spread of the disease originated mainly in an imperfect knowledge of the times of appearance of the epidemic in different districts, is a significant hint of the importance practically, as well as scientifically, of such details as we have endeavoured to set forth. It is well also to bear in mind, *apropos* of the opinion which is or may be held of the influence of contagion in the extension of prior or of historical epidemics, that notwithstanding the means for epidemiological observation which we possess surpass those possessed at any previous times, yet these are so imperfect, that the notion that contagion was the chief agent in the spread of the diphtheria epidemic, was at first very commonly admitted as a most reasonable and just one. This fact is a most unsatisfactory comment upon the epidemiology of the nineteenth century; but it will be admitted, we think, that the chief error rests in the want of any system of epidemiological observation, which can merit the name of scientific.

The times of occurrence of the forerunner of the epidemic; the scattered and disconnected centres of manifestation, and its slow growth extending over a period of several years, would soon point to developing causes, slowly originating over the whole, or the greater portion of the surface of the kingdom, and culminating more rapidly in the southern than in the northern districts.

Whatever were the causes leading to the epidemic, locality has played but a very secondary part in their development, for in the period 1850-1859, in which diphtheria was developed over the whole surface of this country, the disease may be fairly described as pandemic. With that period it was epidemic in many parts of France; in 1850 it was epidemic in Norway; in 1855 in Moscow; and it was observed as the most prevalent throat affection in the French army in the Crimea; in 1856-7 it was epidemic in California and various parts of the United States of America; and in 1859 in Australia and Nova Scotia.

* See Mr. Hart's 'Report,' p. 19.

The results of observation on the etiology of epidemic diphtheria have hitherto been chiefly negative. Drs. Greenhow's and Sanderson's researches have shown that there is no definite connection between the prevalence of the disease and the geological formation or the sanitary state of a locality. It has shown itself, in its utmost malignancy, on every variety of subsoil, and in the most healthy as well as unhealthy districts. On the other hand, there are good grounds for entertaining the belief that individual and family peculiarities favour, in an important manner, the development of the disease.

To determine the influence of the physical configuration of a locality upon an epidemic, requires a series of comparative meteorological as well as typographical and geological data, and these are not yet forthcoming *apropos* of diphtheria. The time has not yet arrived, indeed, when we can submit a discussion over the meteorology of the whole period of the general epidemic, as our data lead us up only to its acme—supposing the acme to have occurred in 1859.

In the meanwhile, however, we may usefully note that if we would successfully study the etiology of the epidemic, we cannot disconnect that study from the observation of allied affections prevailing contemporaneously.

If we examine the mortality returns for the thirteen years, 1846—59, we find that scarlet fever underwent a prodigious increase in 1858, and prevailed in that year to a greater extent than in any past year of the thirteen. (2.) That the mortality from *Croup* advanced year by year from 1854; that, in fact, the disease was epidemic in1856-59, the epidemic culminating in 1858. The mortality from the disease also was prodigiously above the average of preceding years, increasing from 3660 in 1853 to 6220 in 1858. (3.) That the mortality from thrush was also greatly in excess in 1858-9, though not to the same extent as in 1848 and 1852. (4.) That the mortality for quinsey was in excess in 1857-8, in the latter year attaining the highest point in any previous year. (5.) That the mortality from noma had undergone a remarkable increase in 1855-59, culminating in 1857; and (6.) that the mortality from laryngitis had undergone a steady development from 762 in 1847 to no less an extent than 1439 in 1858. In fact, it is not too much to say *all the affections allied to diphtheria prevailed epidemically contemporaneously with diphtheria.*

The foregoing results give additional significance to the unusual prevalence of sore-throat at the same time as diphtheria. Dr. Greenhow has aptly said that "diarrhœa and sore-throat are respectively congeners of cholera and diphtheria, from which their difference is less of character than of degree."

Consumption, its Early and Remediable Stages. By EDWARD SMITH, M.D. L.L.B., F.R.S., Assistant-Physician to the Hospital for Consumption, &c., Brompton. (Small 8vo, London, Walton & Maberley, 1862.)

Dr. Smith has already gained repute for two series of researches, which, with large practical experience, constitute the basis of the merit of this work—one, the inquiries into the vital phenomena of daily life, and the action of almost all dietetic and hygienic agents upon the organism; the other, the distinct enunciation of the existence of a stage of phthisis

preceding the deposition of tubercle. The work has been written to draw professional attention to the latter, and to give practical effect to the former, as well as to base the whole treatment, both in principles and details, upon physiological as well as pathological indications, or, as stated in the preface—

"The author, in writing the following work, has had four principal objects in view, viz., to take advantage of the growing belief of the day, that there is a stage of phthisis in which the disease is as remediable as it is irremediable at a later period; to write a practical work in which may be faithfully represented the actual condition of these cases when regarded in the great numbers in which they have been brought before his observation; to treat the subject, as far as possible, on the inductive method, and on the improved physiology and pathology of the day; and to give practical effect to numerous series of special inquiries which have been made by him during the preceding seven years."

In pursuing his plan, the author gives a sketch of the opinions which have been placed upon record by a multitude of observers, from Hippocrates to Laennec—a sketch which shows that, in reference to treatment, whilst there has been great variety there has also been great uniformity of opinion, and that there has been the most absolute concurrence as to the incurability of the disease; and he then adduces statements made by recent, and, in many cases, living authorities, to show that there is now a general concurrence of view as to the existence of a stage, however, denominated or defined, in which the disease is amenable to treatment. Of the former we extract the author's rapid analysis of the treatment of the disease in former times, to show how little advanced is the practice of the present day over that of past ages.

"Milk has been recommended in all ages with singular concurrence, and with enthusiasm by Aretæus, if we may judge by the list of good effects which he ascribes to it; but Gideon Harvey sneered at it, since he considered that it was to affect the disease by being directly applied to the cavity of the lungs. He, however, admitted that its fatty particles might possibly puff up those who swallow it into some degree of corpulency. Mead also attached less value to it than was the practice with other physicians of his day. Numerous physicians, as Fr. Hofman, added lime water to the milk. Eggs, meat, and fish were commonly recommended; olive oil was recommended by Avenzoar, and mutton suet by Celsus. Sea voyaging was advised by Aretæus and the early physicians, but not by them universally. Carmichael Smyth, in modern times, regarded it as prejudicial, and Gilchrist greatly approved it. Exertion in the open air was insisted upon by Hippocrates, who commended walking ten to fifteen miles a day; and in the middle ages and modern times physicians have recommended their patients to become coachmen, in order to spend their time in the open air. Horse exercise has been commended in all ages, and in modern times by Sydenham, Fuller, Mead, Gilchrist, Pringle, Van Swieten, &c. Carmichael Smyth recommended swinging, which, he said, lowered the pulsation ten beats per minute. Reid recommended persons in phthisis to live in cow-houses. Steel was employed in the middle ages, and busk in cases of hæmoptysis in modern times, by Morton and by Mead, before the lungs have become ulcerated. Fothergill recommended early abstinence,

milk, vegetables, quiet of mind, good hours, moderate exercise, and change of scene. Counter-irritation by caustics was practised by Hippocrates and Aretæus, and by the actual cautery by Galen, and the practice, in some form, has been common in all ages. Sulphuric acid was employed in the middle ages, with a view to its supposed local action upon the ulcers. Speaking with a loud voice was recommended by Sanctorius. Bleeding was practised in all the periods, under examination by a certain number of physicians. In modern times it has been enjoined by Gideon Harvey, Pringle, &c., but Bartholin found the heart thin and dry, or, in other words, fatty and shrunken, and but little blood in the body, and Cheyne remarked that the quantity of blood was much diminished in hectic fever. Gideon Harvey, besides bleeding, recommended the use of steel, opiates, and astringents.

"At the end of the eighteenth century many physicians practised inhalation of various gases and vapours in the treatment of tubercular phthisis, amongst whom we may mention Mudge, Fourcroy, and Beddoes. Fourcroy observed the effects of the inhalation of oxygen, and found that it accelerated the pulse and respiration, and increased inflammatory action, and hence he regarded it as inimical to phthisis. Beddoes, whose work is a monument of industry, based his practice upon chemical theories, and arrived at the conclusion that in phthisis there is an excess of oxygen in the system, and consequently that free air was injurious to the patient. All these ideas tended to the belief that the inhalation of air containing carbonic acid was the proper plan of treatment. In our day we see this theory of hyper-oxidation revived by Liebig, and also upon chemical grounds, and the recommendation that in phthisis the respiratory action should be lessened."

Of the authorities for the existence of an early and remediable stage, the author quotes well-known names, as Clark, Barlow, H. Bennett, Lawson, Ancell, &c., and refers to his own numerous published papers upon the same subject. These prove that although the existence of the stage is admitted, there is not an accord as to the diagnostic signs, and therefore as to the possibility of demonstrating it; but this, in the opinion of the author, will follow the former in due time. Moreover, the work is not limited to this early, or to any stage, but includes all the conditions which the author asserts to be remediable.

In pursuing the plan of the work, the author first divides the stages into three, viz., the pre-tubercular stage, the stage of deposit, and the stage of softening, and describes the general aspect of the patients as derived from his numerical inquiries. He proceeds to consider the evidence of the disease as seen in the general system, the lungs, and some other local parts, and then gives his views on treatment in the same order, and finally discusses the ground upon which the prognosis is to be formed. The aim of the author in his novel plan is evidently to regard the state of the system in a physiological aspect, and to base the treatment in an inductive manner, upon the principle thus laid down, so that the work before us has for its characteristics the discussion of the vital action of the system as distinctly as the great work of Laus adopted morbid pathology as its distinctive feature.

The author gives great attention to the defects in the function of alimentation, and the excess in that of elimination. In the former he

includes various inquiries into the dislike for certain kinds of food, as fats of various kinds, acids, sugar, tea, coffee, vegetables, fruits, bread, meat, &c., and discusses them in relation to acid perspiration, bronchitis, debility, and other diseases. Under the sub-head of assimilation, he proves that the bulk and weight of the body are lessened, and discusses the true value of that indication in relation to the fluids and solids of the body. Various numerical results of observation are quoted, to show that elimination by the skin is increased, whilst that by the kidneys is not lessened, and to indicate the relation of this to the bulk and temperature of the body. Similar investigations are cited as to the frequency of the circulation and the respiration, and a reference is made to the value of certain spirometers. Myalgia, throat affections, the menses and leucorrhœa, innervation, cough, expectoration, vomiting and hæmoptysis, are also considered in detail.

The author enters at length into the evidences derived from the movements, vital actions, and pathological indications of the lungs, and particularly into the question of the action of the air-cells, the effect of lessened expansion of the air-cells, and the nature and progress of tubercular deposits in the lungs; showing the value of the spiral arrangement of the air-cells, already pointed out by him, and the great probability of the truth of the opinions promulgated by Van der Kolk, Addison, Virchow, &c., as to the epithelial or other cellular origin of tubercles.

In the treatment of the disease, the author directs most careful attention to hygienic conditions, with a view to restore the bulk of body by lessening waste and increasing supply. He evidently attaches the greatest importance to the maintenance of a due bulk of body in a philosophical sense, so that the vital actions may proceed without hindrance, and a reserve of nutritive material be always maintained. Inunction of oil and fats, cold bathing, sufficient clothing (but not waterproof clothing), full exposure to the atmosphere, abundant exertion. Mineral and other tonics, and abundance of nitrogenous and fatty food are severally commended; and in reference to the latter, we may cite the following remarks on the requisite amount of nitrogen and fat and the scheme of daily diet:

"As a general rule, it may be laid down that the quantity of nitrogen supplied for each pound weight of body, from fourteen to twenty years of age, should not be less than $1\frac{1}{2}$ grs., and that of carbon 25 grs.; so that, if we consider the weight of the body to vary from 90 lbs. to 150 lbs. in that period, the total daily quantity would be 135 grs. of nitrogen, and 5 oz. to $8\frac{1}{2}$ oz. of carbon.

"The dietary which should be supplied may be thus stated. Three pints of milk; $1\frac{1}{4}$ lbs. of bread; 6 oz. of uncooked meat (equal to 4 oz. of cooked meat); $\frac{3}{4}$ lb. of potato; $1\frac{1}{2}$ oz. of butter and 3. oz. of uncooked bacon, or 4 oz. of eggs. This would give the following quantity of nitrogen:

	Nitrogen.
"3 pints of milk, new and good .....grains	132
6 oz. of meat (fat and lean)	48
22 oz. of bread.....	155
12 oz. potatoes	9
	344

"Hence we would supply upwards of 300 grs. of nitrogen per day, and thus be in excess of the daily requirements of the system, and allow a considerable quantity to be fixed to the tissues of the body as they increase in bulk.

"We think it of great importance that there should be a considerable amount of fat taken, whatever may be the quantity of starch supplied, since it is manifest from common experience that starch alone cannot meet the requirements of the system in reference to this class of food. The dietary just recommended supplies nearly 3 oz. of butter in the milk, and this added to the butter eaten with the bread, would amount to 5 oz. daily. The meat, when well fed, offers upon the whole beast from 25 to 50 per cent. of fat, so that with 6 oz. of fresh meat we shall supply about 2 oz. of fat, giving a total supply of fat of 7 oz.

"We have already shown that the vital actions are greatly reduced during the night, and that in phthisis the night depression far exceeds that observed in health. Hence it is of prime importance to supply food in the night as well as in the day, and the following is the scheme which we ordinarily recommend:

"1. Immediately on awaking in the early morning, ½ a-pint of milk (hot if possible), alone, or with chocolate added, with bread and butter.

"2. For breakfast: ¾ pint of milk, with coffee, chocolate, or oatmeal, and eggs or bacon in addition.

"3. At 11 a.m. ½ a pint of milk, or of good beef tea, made from ox heads or shins, with bread and butter.

"4. An early dinner, with plenty of meat, and milk and egg pudding.

"5. An early tea, consisting of milk with coffee or chocolate, and bread and butter.

"6. An early supper of ¾ pint of milk with oatmeal or chocolate, and bread and butter; or two eggs with bread and butter, with milk to drink.

"7. During the night a cup of milk and a little bread and butter to be placed by the bed-side, and to be eaten if the patient should awake.

"By this mode a much larger quantity of food may be taken than would be possible if the food were given at the usual meal hours, and as it will be taken in small quantities, the system will not be oppressed by it, and the vital actions will not be allowed to subside. It is a dietary which allows a considerable quantity of nutritious material, both nitrogenous and hydro-carbonaceous, to be stored up in the system, since it is rich in both classes of nutriment."

The author, like M. Piorry, attaches very great value to the practice of deep voluntary inspiration when perfectly performed; but as we have not space to follow this question further, we will only add that the author discusses the special influences of the two most recent modes of treatment, viz., by lead and the hypo-phosphites, and enters largely into the action of cod-liver oil and the winter and summer climates suited to cases of early phthisis.

We shall conclude our observations of this thoroughly practical work by citing the conditions which the author regards as respectively

favorable and unfavorable in reference to the issue of treatment, recommending our readers to read the work with the care it deserves.

The favorable conditions are—

"1. The disease in the stage preceding any evidence of the deposition of tubercle, or when the amount of tubercle deposited is very small and isolated at the apex of one lung. 2. The progress of the disease has been slow, so that there have been evidences of slight failure of the general system during many months, and with no evidence of a recently accelerated rate. 3. The original state of the constitution was moderately good. 4. The age from about twenty years to middle life. 5. The existing state of the health still moderately good, so that, by careful regulation, a due amount of nitrogenous food and of exertion may be taken with comfort. 6. The rate of pulsation and respiration not materially varied from that of health. 7. Cheerful willingness to obey the prescribed directions, and such a pecuniary and domestic position that the whole arrangements necessary to the treatment of the case may be carried out. 8. Due freedom from anxiety, and removal from whatever conditions are unfavorable to the restoration to health."

The following are the unfavorable conditions :

"When softening has already occurred. When the deposit is met with in both apices. When the feebleness of respiration is very great, so that there is general flattening of the chest. When hæmoptysis is persistent without any evidence of progress of the disease, or when the disease progresses very slowly. When the patient either cannot pursue the system of deep inspiration, whether from want of respiratory power or of appreciation as to the right method of performing it. When the powers of the general system are greatly enfeebled. When the capability of reaction is found by experience to be very small. When the appetite, digestion, or assimilation is very defective, and particularly when milk, fat, and other kinds of animal food cannot be sufficiently taken even after careful training. When food, clothing, or shelter is deficient in any marked degree. When there is oppressing anxiety. When the patient cannot be removed from injurious conditions, such as foul or heated air, exposure to cold, and sedentary occupations. When self-abuse in either sex is, or has been largely practised, or alcoholic liquors or smoking largely indulged in. When the system is highly sensitive, so that the whole organisation is in a state of perpetual unrest, or when it is so deficient in nervous sensibility and activity that it does not respond readily to the ordinary stimuli. When the patient is younger or older than that indicated. When from any cause the patient will not or cannot obtain change of climate, and will not or cannot steadily pursue the prescribed plan of treatment."

Researches on the Nature and Treatment of Diabetes. By F. W. Pavy, M.D., Fellow of the Royal College of Physicians; Assistant-Physician to, and Lecturer on Physiology at, Guy's Hospital. (8vo, London, Churchill, 1862, pp. 210.)

To account for the saccharine condition of the urine in diabetes, the present fashion is to suppose an excessive secretion of sugar by the

liver on the one hand, or a defective destruction of this substance in the lungs on the other. In a word, the glycogenic theory of Bernard has supplanted the theory of Prout. According to Dr. Pavy, however, the facts, properly read, are calculated to carry us back to the position maintained by our countryman, Dr. Prout, and there is no doubt that the facts present many aspects which admit of their being read in this manner.

After certain preliminary investigations into the physiological relations of sugar in the animal economy, Dr. Pavy proceeds to show that the amyloid substance of the liver, for the knowledge of which we are indebted to Bernard, can be greatly augmented by the nature of the diet upon which the animal is fed. He shows, indeed, that owing simply to the increase of this substance—the liver of a dog may be doubled in weight by a vegetable diet, and nearly doubled by an animal diet mixed with sugar. On a purely animal diet, the average amount of amyloid substance in the liver yielded by seven analyses is 7·19 per cent.; on a purely vegetable diet, the amount rose to 17·23 per cent.; on a diet composed of animal matter mixed with sugar, the amount was 14·5 per cent. These results lead Dr. Pavy to believe that sugar and starch are the source whence the amyloid substance of the liver is derived, and here is the point of departure from the conclusions held by the believers in Bernard's glycogenic theory.

Dr. Pavy in no way impeaches the accuracy of M. Bernard's experiments. On the contrary, he confirms them in every way. The position of the matter is this: experiments have been performed, and results obtained, which are of so striking a character that no one can retain a doubt of their validity. But here is the mistake—that results derived from *post*-mortem examinations have been taken to represent the *ante*-mortem state. It is the interpretation of the facts which is wrong, not the facts themselves.

When blood is obtained from the living animal by passing a curved instrument through the right jugular vein and superior cava into the right ventricle, it is found to contain only a very small trace of sugar; when blood is obtained from the right heart after the death of the animal, it is found to contain sugar in abundance. In seeking an explanation of this anomaly, the question was whether there was a similar difference in the saccharine contents of the liver before and after death. After several experiments to determine how the saccharine metamorphosis of the liver might be arrested, it was found that the addition of a small quantity of potash to the amyloid substance had this effect. A liver, removed as expeditiously as possible, was injected through the portal vessels with a strong solution of potash, and after this, not more than a mere trace of sugar could be detected by the usual means. Another liver, taken from an animal which had been dead some time, in which the signs of the presence of sugar were sufficiently manifest, was treated in the same manner, and the signs of sugar were as unmistakeable after the injection of the potash as they were previously. Dr Pavy had thus chemically arrested the formation of sugar in the liver after death, but as the results obtained from the employment of powerful chemical agents might be open to objection, he devised a method by which any organic chemical change would be as effectually prevented—a method consisting in the employment of the extremes of tem-

perature, freezing and boiling. An animal being suddenly killed, a piece of the liver was excised as speedily as possible, and plunged into a freezing mixture. After this, without loss of time the frozen liver was reduced to a pulp in a mortar, and the pulp, thus obtained, plunged into boiling water, and boiled until a concentrated decoction was obtained. This decoction contained amyloid substance, but it gave no indication, or but the very faintest, of sugar. No gradual thawing of the liver was allowed in this experiment, for if this had been done, the experiment would have been falsified, inasmuch as the post-mortem transformation of amyloid substances into sugar would have had time to take place.

"Our position," says Dr. Pavy, "in reality stands thus. The conclusions upon which our former notions were based were drawn from results obtainable after death. But, it now becomes apparent that we are no longer justified in regarding these results as indicating the condition that belongs actually to life. It is not, that Bernard's observations are incorrectly recorded, or his experiments inexact; but, that fallacious inferences, as shown by more extended investigation, have been drawn from these experiments and their results. The views I have advanced are perfectly compatible, not with our former conclusions it is true, but with the experiments upon which those conclusions were founded. From an ordinary examination of the liver and the blood of the right side of the heart after death, we obtain reactions that infallibly indicate a large impregnation of sugar. The deduction from this hitherto has been, that the sugar existed there naturally during life. This deduction, however, although it has appeared to our minds exceedingly plausible—so plausible, indeed, that no one before has been led to question it; yet, confined to such experiments, it is obviously gratuitous. All that can be strictly or logically inferred from the result of such an examination is, that the liver and the right ventricular blood are strongly saccharine *after death;* to show that this is likewise the condition *during life* requires another mode of experimenting. And, notwithstanding, as it is fair to confess, nothing was to have been reasonably expected beyond a ratification of our views, yet, on actually prosecuting the inquiry, it turns out that we can no longer overstep the strict letter of interpretation belonging to the original experiments.

"Briefly to recapitulate, the following are the conclusions that arise out of the facts that have as yet been mentioned in reference to glyco-genesis:

"Evidence has been given that the so-called glyco-genic matter is formed in the liver from sugar as one of its sources. Hence, if sugar were its natural destination, the process would be sugar into glycogène, and glycogène back again into sugar—a repetition that certainly appears, to say the least of it, extraordinary and improbable, as a designed occurrence of nature.

"The blood, under normal circumstances, only contains more or less evident traces of sugar; and that belonging to different parts of the system does not present, as far as I can discover, after adopting the necessary precautions in the examination, any appreciable variation in constitution. In some most carefully conducted examinations, I was unable to distinguish, by any difference in behaviour,

the blood of the portal vein from that of the right side of the heart.

"The liver itself is found free from sugar, or, at the most, is only impregnated with it, to the minutest extent, when treated so as to come down upon it in a condition the nearest possible to that of life."

The pathological and therapeutical portion of Dr. Pavy's work sets forth no original views, and we are forced to the conviction that notwithstanding the ingenuity, the novelty, and the correctness of his experiments and investigations in the physiological premises, the essence of this disease and the secret of cure are yet as great a mystery as ever. If Dr. Pavy has succeeded in destroying the theory of diabetes which assumes a sugar-forming function in the liver and a depraved sugar-destroying agency in the lungs, he has put forth no theory of his own. He has, indeed, fallen back on the more solid and practical views of our countryman, Dr. Prout, and he himself acknowledges that all his experiments tend to confirm the opinion expressed by that accomplished and philosophical physician, which opinion was that diabetes was a depraved digestive power, characterised chiefly by the imperfect manner in which the amylaceous and saccharine elements of food were assimilated. Not that the liver does not hold an important position in this theory. On the contrary, the liver must always occupy a most important position in relation to the assimilative processes, and to this organ the best physician will sedulously turn his attention in practically studying the treatment of diabetes.

Dr. Pavy echoes the opinion of Dr. Prout, that "the first and chief point to be attended to in the treatment of diabetes is diet," and he gives an excellent dietary for the diabetic, namely, this:

Dietary for the Diabetic.

MAY EAT

Butcher's meat of all kinds, except liver.
Ham, bacon, or other smoked, salted, dried, or cured meats.
Poultry.
Game.
Fish of all kinds, fresh, salted, and cured.
Animal soups not thickened, beef-tea, and broths.
The almond, bran, or gluten substitute for ordinary bread.
Eggs dressed in any way.
Cheese. Cream cheese.
Butter. Cream.
Greens. Spinach.
Water-cress. Mustard and cress. Green lettuce.
Celery and radishes may be partaken sparingly of.
Jelly, flavoured, but not sweetened.
Blanc-mange made with cream, and not milk.
Custard made without sugar.
Nuts of any description, sparingly.

MUST AVOID EATING

Sugar in any form.
Bread, wheaten or otherwise.
Rice. Arrowroot. Sago. Tapioca. Macaroni. Vermicelli.
Potatoes. Carrots. Parsnips. Turnips.
Peas. French beans.
Cabbage. Brussels sprouts.
Cauliflower. Broccoli.
Asparagus. Seakale.
Pastry and puddings of all kinds.
Fruit of all kinds, fresh and preserved.

MAY DRINK

Tea. Coffee. Cocoa from nibs.
Dry sherry. Claret.
Brandy, and spirits that have not been sweetened.
Soda-water.
Burton bitter ale, sparingly.

MUST AVOID DRINKING

Milk, except sparingly.
Sweet ales, mild and old. Porter and stout.
All sweet wines. Port wine, unless sparingly.
Liqueurs."

The almond cake mentioned in this dietary consists chiefly of almonds and eggs; it is to be obtained at Mr. W. Hill's, a confectioner in Bishopsgate Street, London, E.C.; and it promises to be a valuable addition to the necessaries and luxuries at the command of the diabetic.

The medical treatment is disposed of very curtly. "No medicinal agent, as far as I am aware, has yet been found that possesses the power of permanently diminishing (I introduce the word permanently on account of the remarks I shall have to make with reference to opium) the elimination of sugar in diabetes. All that can be at present expected from medical means is to fortify the strength of the patient, to remove whatever collateral functional error may exist, and, to alleviate symptoms depending on structural disorganisation, endeavouring at the same time to check its advance. An alkaline plan of treatment is that, perhaps, which has received most favour. The Vichy water has been strongly recommended on the Continent, and is pretty largely used in this country. Cases not unfrequently occur, where, however, the mineral acids are indicated; and, administered with a bitter, give rise to a desirable result, by improving the tone of health of the patient. Indeed, the therapeutic management of our case must be conducted upon the ordinary principles belonging to our art; the object to be kept in view, being, to resort to the use of such measures as are best calculated to improve the tone of system of the diabetic."

In conclusion, it is no more than our duty to express the pleasure we have experienced in looking through this work on diabetes, and to say that there is no better monograph on the subject in our language.

On Dropsy connected with Disease of the Kidneys (*Morbus Brightii*), *and on some of the Diseases of those Organs, associated with Albuminous and Purulent Urine. With numerous drawings from the microscope.* By W. R. BASHAM, M.D., Fellow of the Royal College of Physicians, Physician to the Westminster Hospital, &c. Second Edition. (8vo, London, Churchill, 1862, pp. 347.)

The second edition of this very practical work has been much enlarged, the most noteworthy additions being the chapters on the curability and treatment of morbus Brightii, on temporary albuminuria, and on the diagnosis and treatment of malignant and cancerous disease of the kidney. Two fresh plates shed considerable additional light upon the diagnosis of tubercular disease of the kidney, and the general remarks upon this subject contain many points of great practical value, as also do the remarks upon the contrast presented by curable, remediable, and incurable cases of albuminuria and renal dropsy. Dr. Basham thinks that temporary albuminuria, arising from some functional disturbance, and altogether independent of organic lesions, is of more frequent occurrence than is generally believed, and he quotes a very interesting case of this kind in connection with a cutaneous eruption. He is also evidently more sanguine as to the numbers of cases in which effectual good is likely to result from treatment.

"A few years since," says Dr. Basham, "and morbus Brightii was considered an incurable disease. More recently this opinion has become modified; and experience leads to the opinion, that while some cases are incurable, and run their course rapidly, and accompanied by a tumultuous disturbance of the chief organs and functions, there are, nevertheless, many cases amenable to treatment, and capable of being brought into the category of a remediable if not curable class of disease. These more favorable results I am inclined to attribute to more expansive views of the pathology of this disease, and consequently to more steady adhesion to defined principles of treatment. While attention was chiefly directed to the local conditions of the kidney, while the disordered state of the organism and the albuminuria were both referred to the anatomical changes and impaired functions of these organs, the treatment was chiefly directed to the secretion of urine, with the hope of lessening the drain of albumen, by the diminution of which it was hoped to check the progress of renal disorganisation. But for some years past I have held, and I have but echoed the opinions of many contemporary physicians, that we must look to the kidneys rather as the organs which more plainly reveal to us the nature and peculiarity of the constitutional disorder, than as the *fons et origo mali*." . . . . . And again: "The treatment of morbus Brightii, to be effective, should be addressed rather to the general nutrition of the blood than to the local condition of the kidneys, or of any other organ, only so far as that organ may be the seat of local congestion or delay of blood in it. I think that, guided by these views, we may recognise the cause of the failure of those methods of treatment which have been based on the idea of a local kidney disorder, rather than on a diffused constitutional disturbance; and I would also venture to assert that this was the reason why, up to

a recent period, morbus Brightii was considered as an incurable disorder. That it is a very serious and a very fatal one, daily experience testifies; but experience also justifies the assertion that many cases are remediable, and, with proper care on the part of the patient, curable. I am confident that these more satisfactory results are to be traced to a course of treatment very different from that adopted in the earlier records of this disease, and based upon views already announced; estimating the renal disturbance, and the albuminuria, but as the manifestations of a widespread constitutional disorder; views which have suggested that aid should be chiefly directed to improve the functions of nutrition, and the progress of degeneration in the tissues, if possible, arrested."

We think, also, that the following remarks on the diagnosis of malignant and cancerous diseases of the kidney are worthy of notice.

"Cancerous or malignant disease of the kidney or bladder is among the least common of the disorders of these organs. It occurs for the most part in the middle or later periods of life. It is incurable, and may be said also to be irremediable, except through the soothing influence of opium; the cancerous growth cannot be arrested, and sooner or later the patient sinks from the exhaustion of frequently recurring hæmorrhage. In a few cases this form of disease brings with it the expressive and unmistakeable features of the cancerous diathesis; in others, this peculiarity is absent, and the countenance of the patient exhibits but the characteristics of a hæmorrhagic and fatal disease. The disease, whether of the kidneys or bladder, is often not always recognised even by physicians and surgeons of eminence, and because sufficient prominence has not been given to what I believe to be the pathognomonic symptom of malignant disease of these organs. That symptom is frequently recurring hæmaturia; the urine in the intervals of the early period of the disease exhibiting no indications of renal or vesical disorder. The hæmaturia at length becomes continuous, and the patient dies from exhaustion.

"The only period during which the diagnosis of cancer of the kidney or bladder is beset with any difficulty, is the first month or two of the origin of the symptoms; and the disease then can hardly be distinguished, except by its antecedents, from calculus of these organs. Hæmaturia is characteristic of both, but in calculus of the kidney, the patient in the great majority of cases has suffered marked symptoms of gravel, or perhaps gout. Whereas, in cancer, till the hæmaturia occurs, no sign of any kind has given rise to any suspicion of renal disorder. If attention be paid to the following most commonly occurring symptoms anterior to the attack of hæmaturia, the difficulty of the diagnosis, even in the earliest period will be considerably lessened. In calculus of the kidney pain and aching in the loins; frequency of micturition; urine more or less loaded with red sand or urates; sympathetic sensations extending to the crest of the ilium, pubis, and external surface supplied by the external crural cutaneous nerve, are among the most frequent premonitory symptoms.

"These, however, are by no means constant, or to be recognised in every case; but there is one that is never absent, and which troubles the patient long before hæmaturia alarms him, and that is frequency of micturition. This may be present for weeks or for months—not always

with the same intensity, varying much with the effects of diet and regimen. In cancer of the kidney these premonitions are not present. Hæmaturia is the first premonitory symptom, and the appearance of blood in the urine is unaccompanied by any sympathetic irritation, except that while it continues there is troublesome frequency to pass water; but this frequency of micturition accompanies the hæmaturia, it does not pre-exist, nor does it continue after the hæmaturia has for a time ceased. This hæmorrhagic state varies very much in the early stage of cancer of the kidney, both as regards duration and amount. In those cases which have fallen under my observation, the amount at first has been moderate, and the duration for a few days. The hæmaturia slowly disappears, and leaving the urine for some time charged with blood-corpuscles, as revealed by the microscope; and with a few membranous flocculi, which are small fibrinous coagula, with no special character to distinguish them from similar coagula found in the hæmorrhagic period of calculus of the kidney. At this period, except in the antecedent [symptoms, there is nothing to mark the difference between the two disorders. The characteristic differences are to be found in the symptoms which mark the progress of each.

"In calculous disease, the urine, after the period of hæmorrhage has subsided, becomes daily more and more loaded with exudation-corpuscles, often called mucous urine; this fluid, when set at rest, throwing down a conspicuous flocculent cloud, which, when examined by the microscope, is seen to consist of cells having a compound nucleus—many possessing the well-known reniform or trefoiled nucleus—thus gradually assuming the character of the pus-cell. Slowly the urine becomes more and more turbid and milky, and settles into the characteristic cream-coloured or yellowish sediment, from the abundance of pus-cells now thrown off. But in cancer of the kidney no such change as this follows the hæmaturia: a period of rest occurs, the urine, to the unaided eye, appears free from blood, and to all appearances healthy; weeks or months may pass, and again hæmorrhage occurs. It probably may now last longer, and be so profuse as to make a sensible impression on the aspect and condition of the patient. Again it subsides, again returns: and thus, after a period of varying duration, exhausted by the frequency and abundance of the hæmorrhage, and worn out by the rapacity of the devouring cancer, for it is seldom limited at the last stage to the kidneys themselves, the patient dies with most of the usual evidences of the cancerous diathesis. So that what had offered at the commencement some difficulty of diagnosis, as the disease progresses sufficiently pronounces itself, and declares with unmistakeable significance its incurable and malignant character. It will be thus seen that the diagnostic symptom of most value is the repetition of the attacks of hæmaturia, the urine not becoming purulent, or with any characteristic alteration during the intervals. The disease with which cancer of the kidneys in its early stages is most likely to be, and has been, confounded, is polypus of the bladder. This gives rise to frequent and serious attacks of hæmorrhage; but it also gives rise to symptoms of retention of urine, from large coagula forming in the bladder, and blocking up the entrance of the urethra. Such coagula rarely form in the hæmorrhage from calculus or cancer. The blood oozes in these disorders more

slowly, and mixing with the urine, forms a solution of blood and urine, with very small flocculent coagula, which are without difficulty passed through the urethra. But in polypus the sudden gush of blood into the bladder coagulates in mass, and often forms an obstacle to the escape of the fluid part as well as the urine, which gives rise to the symptoms peculiar to retention of urine. The surgeon may succeed in detecting the presence of polypus when it has reached to a marked extent; but in the early stage of the disorder, very little reliance can be placed on catheter exploration. In malignant disease of the kidney, the presence or absence of sedimentary matter in the urine subsequent to the hæmorrhagia, will be dependent on the form of cancerous deposit. The ulcerative process, in my experience, is very rare in these forms of disease. The scirrhous growth invades the organ, induces attack after attack of hæmaturia, but rarely sets up an ulcerative process in the kidney. So that the urine does not furnish any sedimentary matter that is peculiar to these malignant forms of disease. After death, the scirrhous mass, when limited to the kidney, is seen deposited in considerable masses obliterating and compressing the tubular structure, but not accompanied by any ulceration. The diagnostic symptoms, then, of cancer of the kidney, on which most reliance can be placed is the repeated hæmaturia. The urine in the intervals presenting nothing remarkable, becoming clear and natural in appearance, and having no cells peculiar to this class of disorder. There are no reliable sympathetic sensations, such as in calculous disease of the kidney become so diagnostic. The patient rarely complains of any uneasiness referrible to the kidneys. An aching at the pubis and glans penis; some uneasy sensations, attributed to the stomach or some undefined spot in the abdominal cavity. These become, as the disease advances, more urgent, constant, and of that gnawing character which is peculiar to cancerous growth. But this is by no means universally the case. In some cases of long duration, and when the kidney becomes the seat of extensive cancerous deposit, a tumour may be traced in the lumbar spaces, and recognised as an enlarged kidney. But there is no symptom more constant than the frequent recurrence of hæmaturia. Indeed, towards the latter stages of the complaint, the hæmaturia becomes habitual; and the patient dies, apparently more from the loss of blood than from the corroding and devouring voracity of the cancerous deposit."

We spoke very favorably of the first edition of this work, and we had good reason to do so. We have still more cogent reason for praising this second edition.

Pathological and Practical Observations on Diseases of the Abdomen, comprising those of the Stomach and other parts of the Alimentary Canal, Œsophagus, Cæcum, Intestines, and Peritoneum. By S. O. Habershon, M.D., Fellow of the Royal College of Physicians, Assistant-Physician to Guy's Hospital, &c. Second edition, enlarged and revised. (8vo, London, Churchill, 1862, pp. 596.)

The present volume on diseases of the abdomen is considerably enlarged. The chapter on diseases of the œsophagus, and the forms of dysphagia, have received further illustration, especially the paralysis of

the muscles of the pharynx and soft palate, as a sequence of diphtheria and local suppuration behind the pharynx, and the dysphagia arising from organic obstruction. The obscurity of diagnosis in the absence of pain, and sometimes also of dysphagia, is shown in some of the instances recorded, and referred to the obstruction being partially removed by sloughing. In cases of cancerous disease of the œsophagus, fatal hæmorrhage from perforation of the subclavian and aorta has happened more than once, but it is to the insidious onset of asthenic broncho-pneumonia that the fatal issue is, in most cases, to be attributed. In the present volume we have a case of occlusion of the œsophagus, in which an operation, proposed originally by Dr. Habershon, was carried out—an operation, that is, for the formation of a gastric fistula. In this case neither solid food nor fluid could be swallowed, and nutrient enemata could no longer be retained. The stomach was opened and food introduced, but the patient was so exhausted that he sank forty-five hours after the operation. Dr. Habershon encourages the repetition of the operation at a period prior to extreme exhaustion.

The chapter on organic and functional diseases of the stomach occupy larger space; and the symptoms of gastric hæmorrhage, of pain, and of vomiting, have received separate notice. In addition to ulceration, obstructed portal circulation, cancerous disease, vitiated blood and aneurism, vicarious menstruation is mentioned, as a cause of hæmorrhage from the stomach, and the author evidently believes in this as a not unfrequent cause. This opinion, open to comment without doubt, is opposed by some writers. That the edges of a pre-existing ulcer may become during the catamenial stasis the source of hæmorrhagic effusion, as from the granulations of an ulcerated leg, is more probable than the direct rupture of healthy vessels. Dr. Habershon maintains that acute inflammation of the stomach may take place without pain, if the mucous membrane only be affected, whilst vomiting is generally present. This point he endeavours to establish by the symptoms in gastro-enteritis, and in the excessive irritation consequent on poisons. In the latter instances he states, that two symptoms demand particular attention, namely, the absence of pain at the stomach unless perforation have taken place, and the marked prostration of strength, with depression of the pulse.

After chapters on diseases of the duodenum, and on muco-enteritis, is one on strumous disease of the alimentary canal, which chapter is well worthy of attentive perusal. Here Dr. Habershon deprecates the use of mercurial remedies, unless in very exceptional instances, and very wisely so.

In the chapter on diseases of the cæcum (which chapter is much enlarged), importance is attached to congenital freedom of the cæcum in allowing rotatory movements to take place, both upon its own axis and upon its mesentery. When complete these gyrations are looked upon as leading to fatal obstruction. Congenital looseness of the cæcum is regarded as being more frequent in strumous subjects. After referring to the mesentery of the appendix cæci, Dr. Habershon describes a pouch as being formed by this mesentery when its direction is along the brim of the pelvis; and he regards the atrophy and perforation of this pouch as one of the causes of internal strangulation of the intestine when a loop

becomes intruded. He states, also, that traction in the direction of the attachment along the brim of the pelvis towards the sigmoid flexure leads to fibroid thickening, and to an appearance resembling an inflammatory adhesion. Atrophy and distension of the cæcum, inflammation or typhlo-enteritis, ulceration and perforation of the cæcum and appendix are described. In the diagnosis of cancerous disease of the cæcum, among other symptoms, it is stated, "that the cæcal pain is often greatly aggravated by food, especially of a fluid kind, and that the accession of pain is sometimes found to arise directly after the nourishment has been taken." This opinion requires confirmation, for it is doubtful whether the pain is more marked in cancerous disease affecting these parts than in simple or strumous inflammation.

Passing the succeeding chapters on diarrhœa, dysentery, constipation, internal strangulation, and cancerous disease, we notice the last, which is on peritonitis. This disease is regarded as never occurring idiopathically, but as arising from three sources:—"1. The extension of disease from adjoining structures, or from perforation and injuries. 2. From blood changes, such as occur in albuminuria, pyæmia, and erysipelas, &c. 3. From almost imperceptible changes or deficiencies in general nutrition, modifying the state of the general health, as in struma, cancer, and climacteric change; or from the hyperæmia of the peritoneum consequent on cirrhosis and chronic disease of the heart and lungs." Dr. Habershon strongly deprecates the use of mercury in peritonitis, except in the last-named secondary hyperæmic conditions, and he is an advocate for the opiate plan of Dr. Stokes and Dr. Graves in the first class of acute disease of the peritoneum.

This volume is the result of hard and honest bedside work. It is especially rich in interesting and valuable cases.

II.

REPORT ON SURGERY.

Cooper's Dictionary of Practical Surgery, and Encyclopædia of Surgical Science. New Edition, brought down to the present time, By Samuel A. Lane, Surgeon to St. Mary's and Consulting-Surgeon to the Lock Hospitals; Lecturer on Surgery at St. Mary's Hospital. Assisted by various eminent surgeons. In two volumes. Vol. I. (London, 1861, pp. 1085.)

A System of Surgery, Theoretical and Practical, in Treatises by various Authors. Edited by P. Holmes, M.A. Cantab., Assistant-Surgeon to St. George's Hospital and to the Hospital for Sick Children. In four volumes. Vols. I and II. (London, Parker, Son, and Born, West Strand, 1861.)

The last edition of Cooper's famous 'Dictionary' appeared under the author's own auspices in 1838, and it was time, therefore, that a new edition should undertake to chronicle the progress of surgery during these three and twenty years. The old ponderous volume has been expanded into two, and the first, nearly equal in bulk to the original, is now before us, whilst the second is promised shortly. The old arrangement is followed in the new edition, the articles being placed alphabetically, and reaching in the first volume as far as H; many new articles have been introduced, and some few of the old ones omitted, but great additions and alterations have been made throughout the work.

Abscess, Erysipelas, Hospital Gangrene, &c., by Dr. Druitt, form a series of able articles on subjects closely connected with the inflammatory process, which process will be given by the same gentleman in the next volume.

Anæsthesia, a subject of quite recent date, and therefore unnoticed in previous editions, is contributed by the late Dr. John Snow, whose numerous experiments and great experience in the administration of anæsthetic vapours are here recorded.

Aneurism has been undertaken by Mr. Erichsen, than whom there

could be no more competent authority upon the subject. Curiously enough, Mr. Erichsen years ago contributed an article on the same subject to Costello's 'Cyclopædia of Surgery,' which has only recently been completed.

Anus, Bladder, Dislocations, Fractures, &c., have been re-written by Mr. James Lane, and display very considerable practical knowledge upon the several subjects, and also an intimate acquaintance with the writings of both English and foreign professors.

Cancer, by Dr. Handfield Jones, gives a good summary of the views of modern pathologists, and the results of microscopic investigation; it also enters into the question of the treatment of the various forms of the disease at some length.

The several articles on the surgery of the eye have been intrusted to different hands. That on Amaurosis, by the editor, hardly comes up to the practice of modern times as regards diagnosis by the ophthalmoscope, &c. Mr. White Cooper has edited, and in great part re-written, Cataract, the article being as full an exposition of the nature and treatment of the disorder as might have been expected from such an able surgeon. The other articles, on Glaucoma, Cornea, &c., are by Dr. Bader; they are full to repletion of the most recent theories and practices of the German schools, many of which—iridectomy, for instance—are of doubtful utility.

Gunshot Wounds, by Mr. Blenkins, is the old article with its Peninsular experience, &c., with that of the Crimean war grafted upon it. This latter is by far the most valuable portion of the article, and a considerable part of the former might have been omitted with advantage. With modern weapons and tactics, it is much more important for the surgeon to know what to do in actual warfare than to wade through the experiences of Kennen, Guthrie, &c., who never saw or imagined a conical bullet.

Mr. John Adams has given us the vast experience acquired in the London Hospital in the article Injuries of the Head, and the conclusions he comes to, and the treatment he advises, are evidences of his great surgical ability.

Mr. Samuel Lane, besides editing the whole work and revising most of the smaller articles, has contributed valuable additions to those on Excision of Bones, Antrum, Hernia, &c., the last article being one of the best in the volume, and including all the views and practice of the best modern authorities, and describing at length the several processes which have been proposed in modern times for the radical cure of the disorder.

The 'System of Surgery,' edited by Mr. Holmes, is a more ambitious work, and its object is "to unite into a complete system the opinions and experience of many men, most of them hospital surgeons in London, and most of them writing on subjects of their own choice." We must regard the attempt to form a system out of such heterogeneous materials as rather quixotic, and one which certainly has not been very successful. Some of the articles are first rate, both in the grasp of the subject and the method of treatment, others again are decidedly feeble and discursive, of which the first and second articles may be taken as examples—that on

Inflammation, by Mr. Simon, being a thoughtful, philosophic argument, based upon close observation and numerous original experiments; while that on Abscess, by Mr. Holmes Coote, is simply a rambling epitome of cases of suppuration in the wards of St. Bartholomew's Hospital.

Sinus and Fistula, Ulcers, Tumours, Contusions, Wounds, are contributed by Mr. Paget to the first volume of the system, and fully sustain the reputation of that eminent pathologist. The article on tumours is especially worthy of notice, the subject being one which Mr. Paget has made especially his own.

Mr. De Morgan has written Erysipelas, which presents no special novelty; and Mr. Callender, Pyæmia, under which term he maintains that two separate diseases are confounded. Tetanus and Animal Poisons have been undertaken by Mr. Poland, who is well known to have paid special attention to both these subjects.

Scrofula, Hysteria, and Collapse, are by Mr. Savory, and do not merit any particular notice.

Syphilis is a lengthy article by Mr. Henry Lee, who has ably treated his complicated subject, and presents us with the most modern views and practice, together with the results at which he has himself arrived. We must confess to being still unconvinced of the truth of Mr. Lee's diagnostic distinction between a suppurating and a non-suppurating sore.

Cancer has been intrusted to Mr. C. H. Moore, whose experience in the cancer wards of the Middlesex Hospital should enable him to speak authoritatively on that subject, but to our mind the article is not superior to that on the same subject in Cooper's 'Dictionary.' The article on Wounds of Vessels (hæmorrhage, &c.), by the same gentleman, is an able account of modern practice in connection with those lesions.

The editor, Mr. Holmes, has contributed two articles only, one on Burns and Scalds, the other on the General Pathology of Dislocations; whilst the General Pathology of Fractures has been undertaken by Mr. T. K. Hornidge, who has given an able *résumé* of modern views by which the old "temporary callus" is almost entirely discarded.

Volume II of the 'System' opens with a most able article on Gunshot Wounds, by Mr. Longmore, Deputy-Inspector of Military Hospitals, and one of the Staff in the New School of Military Surgery at Fort Pitt. Without encumbering his pages with too frequent reference to the military surgery of former days, Mr. Longmore has given the results of modern military practice and experience as gathered in the wars of Schleswig-Holstein, the Crimea, and India. The author's own extended experience in the Russian war, and the departmental details which his position affords him, have assisted him in making this one of the most interesting and instructive contributions to the work. The injuries to which the human frame is liable are next discussed in a series of essays by various authors, each of whom takes a region. Injuries of the Head fall to Mr. Prescott Hewitt, whose lectures on this subject at the College of Surgeons are well known and appreciated. Injuries of the Back, Face, and Neck are discussed by

Messrs. Shaw, Coote, and Gray respectively, in a satisfactory and efficient manner; whilst the CHEST, ABDOMEN, AND PELVIS are undertaken by Messrs. Poland, Pollock, and Birkett. All three of these last-mentioned papers are full of interesting matter, and will form useful guides for practice, representing, as they do, the practice of Guy's and St. George's Hospitals.

INJURIES OF THE UPPER EXTREMITY have been well described by Mr. Flower, late of the Middlesex Hospital, who has collected some interesting data with regard to them, and specially as respects dislocations of the humerus. Mr. Holthouse, of the Westminster Hospital, has undertaken the INJURIES OF THE LOWER EXTREMITY, and his paper contains many original facts and observations.

Lastly, the volume is concluded by a masterly *résumé* of the DISEASES OF THE EYE, by Mr. Dixon, whose able writings upon this specialty are already well known and appreciated. Mr. Dixon writes like a conscientious practitioner, anxious to do the best for every patient, and not given to trying experiments upon "that precious sense," simply to follow a German leader, as is the custom with more than one of the ophthalmic surgeons at the present day. The principles laid down and the practice inculcated are well worthy of general adoption.

The third and fourth volumes of the 'System of Surgery' are shortly to appear, and will no doubt equal their predecessors. The work is, of necessity, unequal in parts, but it is one which is altogether highly creditable to British surgery. Either Cooper's 'Dictionary' or Holmes's 'System' will henceforth be necessary inhabitants of the medical man's library.

On the Use of Cold in Surgery. By FR. ESMARCH, M.D., Professor of Surgery in the University of Kiel. Translated by EDMUND MONTGOMERY, M.D., Demonstrator of Morbid Anatomy at St. Thomas's Hospital. (8vo, London, The New Sydenham Society, 1861.)

Cold-water dressing, so strongly advocated by Liston, was justly considered as one of the great improvements of modern surgery, but Dr. Esmarch takes a much wider view of the applicability of cold, not only in the form of water, but in that of ice and freezing-mixtures.

"In speaking of the application of cold, the expression 'cold compresses' is almost universally made use of. This one circumstance alone proves how little conscious people generally are of the effects which are really produced by using cold in that way. For, as we shall hereafter see, that mode of applying it is, of all modes by which cold can be brought to act, the least to the purpose and the most uncertain; and very often, by that method of application, precisely the opposite of what was intended is effected.

"But before I enter upon the consideration of the subject, it seems to me necessary to examine what are the effects which are to be expected, and which can be obtained, from the use of cold in the treatment of inflammatory and similar processes, for then only will it

be possible to ascertain if, in a given case, we really produce these effects, or if we come short of them.

"One of the most important symptoms, and, according to the best modern observations, the most important factor in inflammatory processes is the increase of temperature in the inflamed part, which is accompanied with an increase of temperature of the whole mass of blood and of the entire body (fever).

"We know that this increase of temperature proceeds, on the one hand, from increased textural changes in the inflamed tissues, and on the other hand, and especially, from an increased flow of blood through the blood-vessels of the part.

"Now, if we possess a remedy which diminishes the temperature of the inflamed part as well as that of the whole body, and which, at the same time, removes the sources of the abnormal production of heat, I think we may call it, with full propriety, an antiphlogistic remedy; and that we really do possess such a remedy in cold is amply proved by experiments, as well as by observation at the bedside of the sick."

"The following are the chief modes of applying cold which come under our notice in medical practice: compresses, immersions, affusions, and bladders or bags of ice. It is by means of the latter only that we are enabled to apply cold exclusively. In the former modes the effects of moisture of the water are always superadded. We have, therefore, to distinguish between *wet* and *dry* cold.

"The most familiar of all methods, but, at the same time, the one least to the purpose and the most uncertain, is the application of cold compresses. One *can* produce by them a continued abstraction of heat, but very often the opposite is effected. If they are not very often changed, the inner surface of the wet compresses will very soon acquire the temperature of the inflamed part, and in this way the ordinary escape of heat will be prevented, and the inflammatory increase of temperature augmented, instead of lessened. With the application of every fresh compress temporary abstraction of heat takes place, but the constant change from heat to cold will give rise to irritation, which, in some forms of disease, may act beneficially, but very often augments the inflammation instead of reducing it.

"If very cold compresses be used, such, for instance, as are made cold by ice, and if these be very often exchanged, the temperature of the part may be continuously diminished; but even then the constant touching and disturbing of the inflamed part by unpractised hands would very often cause a hurtful irritation, which would outbalance the good effects of the abstraction of heat. Moreover, in applying these cold compresses, the clothes and bed-linen of the patient often get damp or wetted through, and it is in this way that those bad effects are produced which the adversaries of cold generally enumerate, and which originate simply in giving cold unintentionally to healthy portions of the skin. Besides, a mistake is here not unfrequently made which may be followed by the worst consequences—I allude to the application of cold compresses on the dry bandages with which wounded, broken, or inflamed parts have previously been dressed. I have seen several cases in which the hand or the arm has become gangrenous, in consequence of having been wrapped up, *lege artis*, in dry bandages, and

then treated with cold compresses. The kind of misfortune, indeed, can only happen to medical men who are extremely careless, or who have never heard that a dry bandage contracts greatly as soon as it is wetted; but on referring to the literature of this subject, we find that such incidents have been explained by the adversaries of our remedy as the bad effects of cold, whilst they were simply the consequences of wet, or rather of carelessness or ignorance.

"For all the above-mentioned reasons, cold compresses ought to be dispensed with, at least in severe cases; or if necessity compels one to use them, their application ought to be carefully superintended. But truly the time has fully come when the expressions "cold" and "cold compresses," ought not to stand any more for one and the same thing.

"Very much more effective, and in many cases well answering the purpose, are cold local baths (immersions) and affusions with cold water (irrigations)."

In order to apply cold most effectually the author has invented various differently shaped flasks and boxes of metal, suitable for the application of freezing mixtures to the several parts of the body, the parts adjacent, which are not to be exposed to the cold, being protected by a layer of cotton-wool.

"We now turn our attention to the indications which are to guide us in the use of the constant abstraction of heat, and it may be stated in general terms that the more acute and severe the inflammation is, and the more important the inflamed part of the organism, the more urgently indicated is the application of this treatment. The direct effect of the treatment is, of course, more powerful in proportion as the inflamed part is nearer to the surface of the body, but deeper-seated parts are by no means inaccessible to cold. We observe that in inflammation of internal organs, such as the lungs, heart, abdominal cavity, &c., the treatment by cold is becoming more general.

"To determine how long a time we ought to proceed with the application of cold in a particular case is a more difficult question. As long as there is any abnormal increase of temperature, the abstraction of heat acts, as a rule, beneficially. But we shall probably come to a much more accurate estimate, and shall be able to determine with the thermometer how long the remedy is to be continued, in the same way as Traube, Wunderlich, and others, take measurements of temperature for their guidance in the treatment of fever cases. I have occupied myself now with measurements of the kind, but have not come to any conclusion yet as regards this point."

Dr. Esmarch was in Paris during the revolution of 1848, and he contrasts very favorably the appearance of the wounded soldiers, who were treated by the application of cold irrigation, &c., in Gros-Caillou, the large military hospital near the Champs-de-Mars, with that of the wounded in the Hotel Dieu, and the other hospitals where common cataplasms and all the old-fashioned methods were employed

Nineteen cases illustrating the treatment by cold are quoted, of which the following are among the most interesting:—

CASE 1.—*Compound fracture; application of ice during eight weeks.*—H. R—, a strong working-man, æt. 28, got a compound fracture of his tibia and fibula, with considerable contusion and laceration of the surrounding soft parts. This was caused by a heavy sack of grain falling from thirty feet high, out of the trap-door of a corn-loft, upon his left leg. The patient was at once taken into Friedrich's Hospital. The tibia and fibula were found broken in their middle, and the lower, short fragment of the tibia protruded through a large, lacerated wound of the skin. We succeeded soon, by extension, in bringing the bones back into their normal position. The leg was then enveloped with Scultetus's bandages, and placed on a Heister's splint; two large bags of ice were put over the region of the wound. Immediately after the accident the pulse was small and feeble, but became towards evening so full and strong that the patient was ordered to be bled to twelve ounces. During the next day or two there was some swelling and redness around the wound, but the inflammation was soon subdued by the constant use of ice. The man had no pain, slept quietly at night, and felt well. The wound was now dressed with oil and lint, and the two ice-bags were kept on the leg day and night. At the lower margin of the wound the naked bones could be seen for a time bathed in pus, until, in fact, they were covered from all sides by the advancing granulations. By the ninth week the wound had got considerably smaller, and the fracture was nearly united. The ice-bags were now taken away, as they were becoming inconvenient to the patient. On several previous occasions we attempted to do without the ice, but violent pain soon compelled the patient to implore us to reapply it. By the thirteenth week the wound had cicatrized, without a particle of bone having been expelled. During the thirteenth week the patient left his bed, and some weeks afterwards the hospital, with an entirely useful and scarcely shortened leg.

CASE 10.—*Inflammation of the cervical vertebræ; application of ice during six weeks.*—H. T—, a merchant's apprentice, whose cervical glands had been from childhood hard, swollen, and suppurating, got—in consequence of a cold—a very painful inflammation of the cervical vertebræ. This inflammation made rapid progress in spite of the use of leeches, of iodine ointment, and of cod-liver oil; the patient, therefore, came to our hospital. His head was then bent forward to such a degree that his chin was almost touching the sternum. The cervical portion of the vertebral column was surrounded by firm exudation, so that the much swollen region of the neck felt as hard as wood. The upper half of the cervical spine was bent forwards upon the lower at an obtuse angle, the spinous process of the fourth cervical vertebra being the most protruding part. The swollen portion of the neck was very tender to the touch, especially in the region of the third and fourth vertebræ, but the pain was most intense when the patient made any attempt to move his neck, under which effort the scaleni and the right sterno-mastoid muscle became very tense. Great pain was also felt in walking, and when the head was pressed from above upon the vertebral column. There were no paralytic symptoms, but the patient was very much weakened, and presented altogether a most pitiful aspect. Under these circumstances the prognosis seemed to be a very unfavorable one.

An ice-bag was applied to the neck, and every fourth day an artificial leech was put on. After this treatment had been persevered in for six weeks the tenderness had quite disappeared; and, although the swelling had but partly subsided, the head could be straightened much more freely

than before. The ice now became disagreeable to the patient, and was, in consequence, discontinued. To hasten the absorption of the still existing exudation, an issue was made in the region of the neck, and one grain of calomel daily given to the patient. The progress towards cure under this treatment was slow, but continuous. After the lapse of six months the patient was perfectly cured, and left the hospital with a completely moveable neck.

Case 17.—*Acute rheumatism; application of ice for eight days.*—The patient, who was a strong man, æt. 24, had been out boating in the middle of January, 1859, in light clothes, whilst a cold east wind was blowing. The next day the right wrist-joint was somewhat swollen and tender. On the 20th of January both knee-joints began to swell, and became so painful that the patient had to keep his bed. On the evening of the 21st the left ankle became also affected. He then sent for me. I found him very feverish; and as he had no sufficient attendance at home, I made the proposal to take him into the hospital, and to treat him by continuous abstraction of heat. It was a mild winter, and at first no ice could be procured; I was, therefore, compelled to apply cold compresses for the first twenty-four hours. They were agreeable to the patient, but the constant renewal of them irritated him so much that he could not sleep, though he had taken half a grain of morphia. The next morning the right ankle-joint and both shoulder-joints were tender, and the fever had increased; I ordered him, therefore, some digitalis. In the afternoon some ice was procured, and ice-bags were at once placed on the most painful joints. The pain immediately diminished considerably, the fever abated, and the patient slept very well the following night. During the next few days most of the large joints were attacked in succession, whilst those previously affected became free. We applied ice-bags everywhere, so far as the small store of ice permitted. The patient felt the greatest relief from the treatment. He had, when quiet, no pain whatever, the pulse became less frequent every day, and on the 30th of January all his joints were free from pain and swelling. In some of them a little stiffness was still felt. I, of course, examined the heart several times daily with great care. On the morning of the 27th of January I heard a slight systolic murmur at the apex, but it had completely disappeared by the afternoon.

On Long, Short, and Weak Sight, and their treatment by the scientific use of Spectacles. By J. Soelberg Wells, M.D., Ophthalmic Surgeon to the Middlesex Hospital, &c. (Large 8vo, London, Churchill, 1862, pp. 112.)

In these pages Dr. Soelberg Wells gives in a readable and practical form the results of the observations of Von Gräfe, Donders, and other leading German ophthalmologists in this class of eye-diseases. He treats successively of the accommodation of the eye, "the range of accommodation," myopia, insufficiency of the recti-interni muscles, sclerotico-choroiditis posterior, presbyopia, hypermetropia, paralysis, spasm, and atony of the ciliary muscle, &c., and under each of these heads the reader will find all the latest information set forth with fulness and with a fair amount of clearness also.

Dr. Wells pays particular attention to hypermetropia—a subject which was but little noticed, and certainly not properly under-

stood until Von Gräfe took it into hand. Hypermetropia is the state in which the eyes are adjusted for converging rays—parallel rays, that is to say, being brought to a focus behind the retina when the eye is at rest, from the refractive power of the eye being too low or the antero-posterior axis too short. Speaking of the treatment of this affection, Dr. Wells says:

"I must strongly urge the necessity of the hypermetropic person wearing glasses *always*, for distant as well as for near objects. Thus only can he be perfectly and permanently freed from the discomforts of his affection; for even although asthenopia do not exist at first, it will show itself if the hypermetropia be allowed to progress through the non-use of spectacles. We must insist upon his gradually accustoming himself to stronger and stronger glasses, until that number is reached which really neutralizes his hypermetropia, which he required when his power of accommodation was paralysed by atropine.

"It has been thought that asthenopia might be cured by gradually accustoming the eye to weaker and weaker glasses, so as finally to render their use altogether superfluous. But the reader will now understand how just the contrary proceeding is necessary in hypermetropia. If we wish permanently to cure the patient, we must prevent all undue straining of his accommodation, and this can only be done by completely neutralizing his hypermetropia, by the use of that glass which changes his eye into a normal eye, enabling it to see distant objects perfectly without almost any, but the very slightest, action of the power of accommodation.

"I would strongly urge the attention of the profession to the important fact that asthenopia is almost always due to hypermetropia, and that these cases which, under any form of treatment haunt our out-patient rooms for months and years without relief, may be speedily cured by the proper treatment of their hypermetropia. Let us but consider the crowd of sempstresses, watchmakers, engravers, &c., who are rendered incapable of following their employment, whose future is starvation, if this fact is not attended to!"

The general hints upon the choice of spectacles are also well worth being remembered.

"We should never," says Dr. Wells, "permit the use of single glasses, for whilst the one eye is habitually used, the vision of the other soon deteriorates on account of its disuse, and it may become considerably amblyopic.

"We must be careful in choosing spectacles that they fit accurately, that one glass is not higher than the other, that they are sufficiently near the eyes, and that the centre of each glass is exactly opposite the centre of the pupil. The last caution is particularly necessary in the selection of glasses which fit on to the nose by means of a spring (pinces nez), for they are often not accurately centred, and if they do not fit properly, so that their centre corresponds to the centre of the pupil, they act as prisms, and give rise to strabismus, which may even, if their use is persisted in, become permanent.

"Concave glasses should be quite close to the eye, otherwise they will diminish the size and intensity of the retinal image. As the rays impinging upon a concave glass are rendered divergent by it, it

follows that the further the glass is removed from the eye the fewer peripheral rays will enter the latter, in consequence of which the retinal image is diminished in size and intensity. The reverse obtains when convex glasses are used, for as they render the rays falling upon them more convergent, a greater number of peripheral rays will enter the eye the further (up to a certain point) the convex glass is removed from it, the retinal image becoming at the same time larger and more luminous.

"The proper and scientific choice of spectacles is indeed of great importance to the public; and I have no hesitation in saying that the empirical, hap-hazard plan of selection generally employed by opticians is but too frequently attended by the worst consequences; that eyes are often ruined which might, by scientific and skilful treatment, have been preserved for years. I would, therefore, strongly recommend the adoption of the following plan, which is largely employed on the Continent, and also by several ophthalmologists in England:—The medical man himself selects the proper glass from his spectacle-box (which contains concave and convex glasses, corresponding numbers being kept by the optician); the focal distance of the required glass is written on a slip of paper, which is taken to the optician, who supplies the patient with the spectacles prescribed thereon. Thus are we sure that the patient is furnished with the proper glasses.

"It will have been observed that there are indeed many questions to be considered in the treatment of these affections; and I would strongly impress it upon the reader that, after he has made himself completely conversant with the theoretical portion of this subject, it is only by a thorough practical examination of a number of cases that the requisite facility in the choice of spectacles, the examination of the range of accommodation, &c., can be required. To those who consider the views we have propounded as somewhat abstruse and unpractical, I would reply that the apparent difficulties lie but on the surface, and that a little perseverance and practice will soon enable them to unravel the knotty points."

Observations on the Division of the Gustatory Nerve, and on the Ligature of the Lingual Artery, in the Treatment of Cancer of the Tongue. By CHARLES H. MOORE, ESQ., F.R.C.S., Surgeon to the Middlesex Hospital. ('Proc. of the Royal Med. and Chir. Soc.,' Nov. 26th, 1861.)

The principal object of the author is to revive an operation which was devised and once practised by Mr. Hilton, in the year 1850, and, though of much value, never again performed.* Amongst the many sources of the peculiar painfulness of cancer of the tongue, irritation of the fifth nerve could be assigned as occasioning the pain of so much of the tumour as was in front of the fauces, the tenderness of the ulcer, the pain in the regions of the parotid, ear, temple, and crown of the head, and the excessive secretion of saliva. All these being traceable to the encroachment of the disease on the gustatory branch of the fifth, the section of that nerve between the disease and

* Guy's Hospital Reports,' second series, vol. vii, p. 251.

the brain should relieve them; and such, in fact, is the case, for relief is instantly afforded when the nerve has been divided.

The operation, as practised by Mr. Moore, consists in cutting through all the soft structures on the inside of the ramus of the jaw by an incision immediately behind the last molar tooth, extending three quarters of an inch in a direction from the angle of the jaw. The only structures which could be divided by such an incision were the mucous membrane and a part of the mylo-hyoid muscle, with the gustatory nerve descending forward between them, about half an inch from the tooth, and nearly at a right angle with the direction of the incision. It is advisable to operate with a curved knife, as the alveolar ridge might shield the nerve from the edge of a straight one, and also to cut outwards quite to the bone.

The author has operated in five cases of cancer of the tongue, three of which are given at length. The relief was immediate. Salivation, the pains and tenderness of the tongue, and the reflected irritation of the fifth nerve, were all gone at once. Soreness of the wound, with swelling, remained for some days; but after that the patients took food, swallowed, and spoke with comparative ease. They slept, and improved in general health. The tongue in each case was absolutely insensitive on the side operated on from the anterior pillar of the fauces forward, and no sapid substances aroused taste in those parts. One patient frequently, on awaking from sleep, found himself chewing the cancerous mass between his toothless gums, but the compression occasioned him no pain. The relief was permanent so far as the gustatory nerve was concerned, but when the disease invaded the area of the glosso-pharyngeal nerve, new pain arose. One patient had been operated on in August, and had no return of pain up to the present time—a period of three months. In the last-mentioned case the author had attempted to benefit the patient, in whom extirpation was unsuitable, by withdrawing from the tumour its nourishment of blood, in addition to its nervous influence. He accordingly tied the lingual artery on the side of the disease two days after he had divided the gustatory nerve. The ulcer became paler after the operation, but neither sloughed nor healed, and in five weeks the whole tumour was perceptibly smaller than before the operations. From that time the tumour began again to increase. The author had desired, upon the renewal of growth in the tumour, to tie the opposite lingual artery also, but the patient was content with the amount of ease which he was enjoying, and indisposed to incur a renewal of the pain which had followed the first operations.

On the Laryngoscope, and its employment in Physiology and Medicine. By J. N. Czermak, M.D., Professor of Physiology in the University of Pesth. Translated from the French Edition by George D. Gibb, M.D., M.A., &c. (8vo, London, The New Sydenham Society, 1861, pp. 80.)

What has been done for diseases of the eye by the ophthalmoscope is being rapidly done for diseases of the larynx by the laryngoscope.

Thanks to this instrument, indeed, the larynx is no longer that *terra incognita* which we have hitherto been content to leech and blister, and occasionally cut into, without any very distinct notions sometimes of the pathological changes going on within. And the same remarks apply to the posterior nares, and the upper part of the pharynx; for these parts may now, by the same means, be as distinctly brought into view as the larynx itself. Liston and Garcia made use of simple mirrors for the examination of the throat; Mr. Avery also distinguished himself by his ingenious appliances invented for this purpose; but Dr. Czermak has gone much further, both in perfecting the instrument and in applying it to the systematic investigation of the parts—so much further, that his name will always remain identified with the subject; and not one of the least of the good services rendered by the New Sydenham Society to the medical profession of this country is the selection of Dr. Czermak's monograph for publication, and in the nomination of Dr. Gibb to the task of translation.

The mode of examining the larynx of another person is as follows:

"The person examined places his hands upon his knees, the upper part of the body is advanced forwards, the neck bent onward, the nape slightly inclined backwards, the mouth widely open, the tongue flattened and held a little without.

"The observer is seated in front of the person to be examined; he places in his mouth the handle which supports the illuminating mirror, and looks through the central opening; the laryngeal mirror, introduced into the back part of the mouth with the right hand, is illuminated by the light which is projected from the illuminating mirror; the left hand can be placed upon the shoulder of the person examined, and steadies the chin and the nape, or in holding a tongue depressor, which we can often trust to the patient himself.

"In the first place, the illumination of the back part of the mouth and the mutual position are regulated; then the laryngoscope is heated, and its temperature regulated by the touch. After these preliminaries are gone through, we request the patient to open the mouth wide, and alternately to inspire deeply and to pronounce the sound *ah;* during this, we endeavour to place the back of the laryngoscope against the uvula and the velum palati, to sustain these parts a little, and to give to the mirror a convenient inclination; at times it is impossible to avoid touching the posterior wall of the pharynx; the examination is directed by the image we thus obtain.

"In this way we can commence each laryngoscopic examination. Practice and reflection will bring each observer to comprehend the modifications to which he ought to submit this proceeding, according to the special circumstance; whether, for instance, he is in some degree to advance or to withdraw the laryngoscope, to bend it, to lower or to elevate it, to change the position and attitude of the individual undergoing examination, raise his chair, &c."

Practice on the dead body and on oneself (autolaryngoscopy) are advised before attempting to examine another, and even then, as the author says, we may not succeed perfectly until after numerous trials.

"There are a certain number of individuals in whom the organs of the throat are very irritable, abnormally proportioned, or placed in an abnormal position, &c.; on them the first examination does not give any definite results, or at least they are not satisfactory. In such cases we can, if it is not wished to make use of narcotics, by *methodical practice*, successively remove each difficulty, and a few days, as I have ascertained, are sufficient to obtain a good result; thus we can advise the opening of the mouth and to keep it widely open, to flatten and to advance the tongue, to render the back part of the mouth less sensitive, frequently placing it in contact with foreign bodies, &c. This practice will not be found void of utility, even when the first examination has already given satifactory results, either because we may have the intention of repeating the examination more exactly and more conveniently, or because we may wish to render the performance of an operation possible, or of any manipulative treatment whatsoever. This preparation of the patient necessarily retards the examination, but this is not an inconvenience in chronic cases. We have likewise recommended the practice of autolaryngoscopy with advantage to intelligent patients, especially in chronic cases, where repeated observations are necessary.

"But all these proceedings become impossible under the unfavorable circumstances previously enumerated, in acute affections, where we cannot afford the time necessary for the preparation of the patient.

"Nevertheless, this inconvenience diminishes nothing of the incontestable value and practical importance of the laryngoscopic method, in the eyes of persons who know and are able to appreciate it. Every method has its limits."

Rhinoscopy is a further development of the science by which the posterior nares and upper part of the pharynx are brought into view. To accomplish this requires great practice, and insensibility, either natural or acquired, of the parts involved, for it is essential that the soft palate should be hooked forward with a spatula before the rays of light can be properly directed. Having ourselves witnessed the demonstration of the posterior nares, &c., by Dr. Czermak by this method, we must say that we regard the proceeding as even of greater interest than that of the larynx, and we could not but admire the facility with which all the parts were brought into view. Notwithstanding one's anatomical knowledge of the parts, their appearance is at first a little confusing, but soon the *septum narium*, turbinated bones and Eustachian tubes are fully recognised.

A drawing of a case of deafness examined by the author is given, in which he found the right side of the nares normal, but—

"On the left side, on the contrary, there were two morbid swellings of the mucous membrane developed, in front and above the pharyngo-palatine arch, which extended up to the opening of the Eustachian tube. These two tumours prevented our seeing the catheter when it was introduced, and seemed to conceal almost completely the posterior orifice of the nasal fossa of the same side, which are seen only in the form of a small fissure.

"These tumours, of which one part assumed the form of the comb of a cock, and of which the base constituted the lateral wall of the pharynx,

were enclosed between the posterior wall of the pharynx and velum palati, which they compressed a little to the right by their superior part; this explains why the uvula was not found in the median line beneath the septum of division of the nasal fossæ.

"The superior tumour, which was the larger, corresponded by its swollen extremity to the posterior border of the orifice of the Eustachian tube; and the inferior tumour, which was much smaller, embraced the anterior and inferior limit of the same orifice. The two tumours were of a much darker colour than that of the surrounding mucous membrane, and when they were touched with a sound introduced in the course of the rhinoscopic examination, they exhibited a firmness which was well marked.

"The pathological observation which has been described presented no other important or fresh results in the diagnosis of the patient's affection, which could be realised very well by means of the data of the ordinary otiatric method; but it completed the description of the disease in a satisfactory manner, and demonstrated the utility of the rhinoscopic method, and the possibility of employing it, without which we should never have arrived at a sufficiently complete description of the disease."

The result of the author's observations, made by the aid of auto-laryngoscopy, is to confirm the correctness of the results published by Garcia, in relation to the following points, viz.:

1st. In quiet breathing, the glottis remains widely open.

2nd. The arytenoid cartilages perform very rapid and independent movements, when the glottis is contracted during pronunciation.

3rd. During the emission of sounds from the chest, or of a shrill voice, the epiglottis assumes a different position, and is more or less distant from the arytenoid cartilages.

4th. The superior vocal cords exert no influence upon the production of the voice; this is only produced, as J. Müller has proved, by the vibrations of the inferior vocal cords, distinctly to be seen, unless the sounds are too high, when the vibrations are so numerous as to become imperceptible ("*the inferior ligaments, at the bottom of the larynx, form exclusively the voice, whatever may be its register or its intensity, for they alone vibrate at the bottom of the larynx*").

An interesting investigation is made into the mode in which closure of the glottis is effected, which the author has found to take place in the following manner:

"1st. The arytenoid cartilages intimately meet at their internal surfaces and processes, and they bring the edges of the vocal cords in contact.

"2nd. The superior vocal cords approach the inferior vocal cords, so as to obliterate the ventricles of Morgagni; at the same time they also meet in the median line.

"3rd. The epiglottis being lowered, and its cushion become more prominent still, it presses against the closed glottis; the contact taking place from before backwards."

Some light is thrown also upon the process of deglutition, for the author says—

"It is certain that during deglutition the larynx undergoes complete

closure, which takes place in the manner described before the commencement of the act of swallowing. So we see that M. Meyer expresses a false opinion, in asserting that the larynx is closed, or rather 'is covered by the epiglotis, depressed mechanically by the alimentary bolus,' although he is right in stating that, after the passage of the bolus, the epiglottis is raised again by its own elasticity and that of its ligaments.

"If we voluntarily contract the pharynx, as in deglutition, when the mouth is widely open, in order to permit the application of the laryngoscope, we sometimes may see that part of the epiglottis turned up, which freely overlaps the closed larynx, so that a considerable portion of its inferior surface becomes visible.

"This reversed portion, and the posterior wall of the pharynx, form the boundaries of a small round opening which gives passage to the air, if we arrest the further contraction of the pharynx, and if we open the glottis. The same figure corresponds to the situation of the parts, when we desire to gargle them. When, on the other hand, I endeavour to continue deglutition, which, besides, never perfectly succeeds with the mouth widely open, the epiglottis disappears under the base of the tongue."

A series of clever woodcuts are given showing the varying conditions of the glottis during the acts of respiration and the production of various sounds. One of these gives the bifurcation of the trachea and the orifices of the bronchi, which have been distinctly seen by Dr. Czermak on several occasions. Twenty cases of pathological changes in the larynx discovered by the author are given, of which we quote two.

CASE 6.—*Partial destruction of the epiglottis, with considerable swelling of the false vocal cords; hoarseness degenerating into aphonia; congenital fissure of the velum. Inspection of the entire trachea, down to the bifurcation.*

P. P.—, a clerk, was affected with a chancre in 1847; the same year he was seized with a hoarseness, which degenerated into aphonia. His voice is better about the middle of the summer, when the weather is dry.

The application of the laryngoscope (25th January) could be made with great facility, the patient having a complete congenital fissure of the velum palati.

The glottis is half open. The epiglottis, considerably thickened on the right side, is notched in the middle; the border and posterior surface show evident traces of loss of substance.

The superior vocal cords are considerably relaxed and swollen, in such a manner that they touch one another in front in the median line, even when the glottis is but half open, and that they almost entirely cover the inferior vocal cords. We can only perceive a narrow portion of the posterior part of the border of the inferior vocal cords.

When the patient desires to utter a sound, the false vocal cords apply themselves one against the other in the median line, whilst, in the normal condition of phonation, they are found always at a distance of a few lines from one another.

This circumstance prevented the formation of regular sonorous vibrations. The air could pass only but with a hissing noise between the edges of the

relaxed superior vocal cords. This abnormal state was, without doubt, in the present instance, the real cause of the aphonia.

In deep inspiration, the glottis opened itself in a normal manner, and of a normal width. The favorable circumstances which were met with in this patient, in consequence of the insensibility and conformation of the velum palati, permitted of my *examining the whole of the trachea down to the bifurcation.*

CASE 7.—*Aphonia for eight months; constriction and insufficiency of the glottis; swelling and infiltration of the mucous membrane of the arytenoid cartilages; obliteration of the ventricles of Morgagni; direct cauterization of the affected parts by the aid of the laryngoscope; formation of white eschars.*

On the 26th January, I examined, at the request of Professor Balassa, M. J. R—, a merchant, aged thirty-two years. Eighteen months ago, on a very hot summer's day, he was suddenly seized with a dreadful hæmoptysis, the result of violent agitation, and after drinking a large quantity of cold water; subsequently, fits of coughing and hoarseness supervened, but the hæmoptysis did not return. The patient has had aphonia for eight months, and breathes with a sensible rattling noise. Inspiration is more or less distressing.

The laryngoscopic examination made known constriction and insufficiency of the glottis; the constriction was brought about by the swelling and considerable infiltration of the mucous membrane which encloses the arytenoid cartilages, and which necessarily limited the mobility and likewise the separation of the arytenoid cartilages and their processes; the insufficiency, on the other hand, was produced either by the limited mechanical mobility of the parts, or, particularly on the right side, by the irregular notches on the edges of the vocal cords, which were of a grayish-white colour.

The enlargement of the glottis did not exceed some twentieths of an inch in its transverse direction (constriction), whilst occlusion without a great display of force was never hermetic (insufficiency). The patient could not compress the air in the chest unless with a great effort, and during a short space of time, because it escaped by the glottis.

The image given by the laryngoscope, when the glottis was enlarged a little over the half of the transverse diameter, as much as it could attain, is represented. The fold of mucous membrane which encloses the arytenoid cartilages is swollen, injected, and very much stretched; it was the samel with the posterior vocal cords, which were likewise swollen, but relaxed. The ventricles of Morgagni were obliterated.

Antimonials were employed by Professor Balassa at first, and afterwards quinine, when fever and night sweats supervened.

The condition of the larynx had not scarcely changed when, on February 10th, 1859, I examined the patient over again. The redness of the fold of mucous membrane of the arytenoid cartilages had almost entirely disappeared, and was replaced by a pale tint; the tension had diminished, and we thought we could see an œdematous infiltration. The superior vocal cords seemed swollen, and their anterior half were in contact at the median line.

Cauterization with nitrate of silver was indicated under these circumstances, and the following day, in the presence of Professor Balassa, I performed it by the aid of the laryngoscope, with a caustic holder, sufficiently long, and suitably curved. The quietness maintained by the patient allowed of my touching exactly the inflamed spots above the arytenoid

cartilages. I introduced the laryngoscope at first with the left hand, and placed it in such a manner, that not only were the different parts of the larynx visible, but the caustic holder could be held and directed by the right hand upon the points described.

When the patient had got over a fit of coughing that was quite insignificant, which had been caused by the irritation, I convinced myself, by another laryngoscopic examination, that there existed two white eschars, clearly limited upon the parts described.

We could now consider the cauterization as having completely succeeded. There was no doubt that the precision of this operation was due only to the application of the laryngoscope. In fact, this instrument alone allowed the eye to guide the hand, and to obtain that precision in the operation which, up to the present time, has been but a lucky chance. I likewise cauterised the patient of whom I spoke in Case 6, and whose aphonia was produced by a swelling of the superior vocal cords. I repeatedly used in this case either a pencil or a small sponge dipped into a solution of nitrate of silver, and have directly operated upon the false vocal cords by means of the laryngoscope several times in presence of my colleagues. There can no longer exist the least doubt upon the possibility of operating by this proceeding. It should not even be allowed, for the future, to execute this operation otherwise than with the aid of the laryngoscope, because this method alone allows the hand to be directed, and to reach with certainty the fixed points within the larynx; whilst not unfrequently, up to the present, the epiglottis has been depressed, and its anterior surface has been cauterised, trusting to chance whether the medications would find their way into the larynx or not.

I shall recall in this place the fact, that the aphonia of the patient whose superior vocal cords were submitted to this treatment was improved, but only for a short time, so that he could utter some sounds after an aphonia existing for many years. It is necessary to remark that in this patient, and also in others, the cauterization of these very sensitive parts produced an irritation so insignificant, that it might have been believed to have failed in its purpose, if we had not seen the caustic holder penetrate into the larynx, and if the white eschars had not been visible upon the superior vocal cords.

On the Immediate Treatment of Stricture of the Urethra, by the employment of the "Stricture Dilator." By BARNARD HOLT, F.R.C.S., Senior Surgeon to the Westminster Hospital, Lecturer on Surgery in the Westminster Hospital School of Medicine, &c. (London, Churchill, 1861, pp. 56.)

Mr. Barnard Holt's method of treating strictured urethras would have been denounced by Mr. Abernethy in no measured terms; and at first sight it is unquestionably a bold and apparently hazardous undertaking to tear forcibly through a stricture, and to bring the urethra at once to its normal calibre. Nevertheless, the uniformly favorable results which have attended the practice fully warrant Mr. Holt in bringing it under the notice of the profession as a great improvement upon the ordinary practice.

Every practical surgeon must have had cases under his care where an increase of even one size in the catheter in use has produced the most marked constitutional disturbances; so much so that it is with

the greatest difficulty that the patient can be induced to allow the treatment to proceed; but, according to Mr. Holt, this novel method not only brings the urethra at once to its normal size, but seldom, if ever, produces any constitutional disturbance. Again, the resiliency of strictures is but too well known, and no honest surgeon would undertake to cure absolutely a stricture of the urethra; but Mr. Holt claims for his mode of treatment a greater permanency of dilatation, and a greater ease in restoring the normal size, should the stricture have been neglected, and allowed to contract. We cannot do better than append Mr. Holt's own summary of the advantages offered:

"1. That the operation is of the most simple kind, and that any one who can pass a bougie through a difficult stricture is competent to perform it.

"2. That it is not attended with hæmorrhage, infiltration of urine, abscess, or any serious local mischief.

"3. That in the majority of instances the relief is immediate.

"4. That the occurrence of rigors, or any other constitutional disturbance is very rare, and the patient is seldom confined to bed longer than from twelve to twenty-four hours.

"5. That the urethra is immediately made permeable to a catheter of full size, which may be ever afterwards passed at discretion.

"6. That this method is available in every kind of stricture where a canula of any size can reach the bladder.

"7. That when the after-treatment is judicious and attentive, the full capacity of the passage is always maintained.

"8. That in all cases of neglected after-treatment, the stricture yields again to this method more promptly than to any other.

"9. That, it being impossible that any but the diseased tissue can be divided, the splitting of the stricture has a decided superiority over any cutting operation.

"10. And, to sum up the great advantages in one proposition, that the process is facile, speedy, prompt in its effects, and free from every danger, immediate or remote."

The stricture-dilator is a simple instrument, consisting of two grooved blades fixed in a divided handle, and containing between them a wire welded to their points, and on this wire a tube (which, when introduced between the blades, corresponds to the natural calibre of the urethra) is quickly passed, and thus ruptures or splits the obstruction.

"The permeability of the canal having been once satisfactorily ascertained, the size of the meatus of the urethra is to be gauged by passing a sound that will conveniently fit, and the number of the sound so used is to be the number of the tube to be passed: it is important to ascertain this, so that the urethra may not be stretched beyond its natural limits, for while the urethra of one person will admit of No. 14, another will not admit more than No. 9.

"The dilator having been previously well oiled, is to be introduced with the handle somewhat over the patient's left hip, and by keeping the convex portion gently pressing against the under part of the urethra,

the point will glide along the upper portion until it is fairly beyond the triangular ligament, when, by bringing the handle to a right angle with the body, and gradually depressing it—but not so much as in the passage of an ordinary catheter—it will usually slip into the bladder; in fact, the same proceeding is to be adopted as in introducing a lithotrite, for the purpose of crushing a calculus. Having reached the bladder, the dilator should be gently rotated, to prove that it is fairly within that viscus, and, being thus assured, the surgeon is next to place the point of the tube he had previously selected, upon the wire between the blades, and thrust it quickly onwards to the end. The stricture being now fairly split, the dilator should be rotated to still further separate the sides of the rent, and then withdrawn; a catheter corresponding to the number of the tube being substituted, for the purpose of removing the urine. The catheter is then to be taken out, and the patient sent to bed, with directions to take, every four hours, for the first day and night, a mixture containing in each dose two grains of quinine and ten minims of the tincture of opium. The facility with which this proceeding can be effected will of course depend upon the kind and number of the strictures, and the existence or otherwise of false passages, or fistulæ in perinæo. The urine having been withdrawn, the patient does not require to pass water for some hours, and when compelled to do so, the stream is usually larger, and the urine passes with greater facility than before. On the second day from the operation, the same catheter should be gently introduced; but, if the patient complains of much scalding, it will better to take one size less. This should be repeated every other day for a week, when the larger one may be substituted, and the patient taught to pass his own instrument. Of course the time occupied in the after-treatment must vary with the nature of the case, and the more obstinate forms necessitate the employment of the catheter for some time, the intervals being gradually increased until it is not required to be used more than once in three, four, or six months, and, in most instances, not more frequently than once a year. The bowels should be relieved by a dose of castor oil taken early on the morning of the operation, and the patient should be directed not to pass water for two or three hours previously, in order—first, to facilitate the introduction of the dilator, and secondly, to permit its free movement in the bladder."

We append one of the cases illustrating the treatment, and certainly nothing can be more satisfactory:

Case II.—*Stricture of fourteen years' standing—Of a dense cartilaginous character—Situated about the triangular ligament—Urine, which was ammoniacal and purulent, passed guttatim—Operation—Recovery.*—John W—, aged 45, a labourer, was admitted in December, 1857, suffering from stricture of the urethra, of fourteen years' duration. Seven years since, the urine having been for some weeks previously passed *guttatim*, he had retention, and applied at St. George's Hospital, where, after considerable difficulty, a catheter was introduced. He continued an in-patient until No. 4 could be passed, and then left, much improved, both in health and manner of micturition. The stricture, however, gradually returned, and, after several attacks of retention, and a generally increasing difficulty in relieving himself, he became an in-patient of the Westminster

Hospital. At the time of his admission, the urine was passed every hour, with great straining, and frequently in drops; there was considerable hardness in the perinæum, and his health was much damaged, as evinced by emaciation, pallor, loss of appetite, sleepless nights, and general feverishness; the urine was highly ammoniacal, and loaded with mucus and pus. A No. 1 silver catheter was attempted to be passed without success; there was complete obstruction at the triangular ligament, and although the point was firmly grasped, it could not be made to penetrate through the stricture. The patient was kept in bed, and the bowels regulated, and on the third day from his admission another attempt was made in the most gentle manner, but with no better result. Considerable irritative fever followed the two trials, and it was only after the expiration of two months, during which time six endeavours were made, that a No. 1 catheter was passed. The stricture was of the cartilaginous variety, about an inch in length, and gave that peculiar grating to the catheter so especially characteristic of cartilaginous obstruction. A large quantity of highly offensive urine was withdrawn, and the catheter was retained. On the following day a larger size was substituted, and on March 4th, the patient having been placed under the influence of chloroform, the dilator was with considerable difficulty introduced, and the No. 12 tube immediately passed. A number 12 catheter was then easily slipped in, and the urine withdrawn. On the following day there was no febrile disturbance, and the patient declared he made water better than he had done for many years. On the succeeding day or second after the operation the urine was passed in a smaller stream, and with some scalding, consequently a number 11 catheter was used, the urine being much less fetid than before. The stream continued small for a fortnight, but the urine was expelled in a much shorter time, and the frequency of micturition materially diminished; he now only required to relieve himself three times during the night, and the same during the day. No. 11 having been passed on alternate days, a No. 12 was introduced, and used every third and every fourth day in the manner already described. Six weeks after the operation he left the hospital, making water in a perfectly natural manner, having been taught to pass a No 12 with ease.

The foregoing, one of a class of strictures that offers the greatest impediment to the introduction of a catheter, is an excellent example of a formidable cartilaginous obstruction situated at a part of the urethra which, corresponding to its curve, gives greater trouble to the introduction of an instrument than any other. The patient had been the subject of a stricture for many years, his urine had for months previous to his admission been passed *guttatim*, his clothes were constantly saturated, and his health was materially damaged by the hourly necessity for relief—an evil which depended upon the stricture, as proved by the large quantity of urine that was withdrawn when a catheter was introduced. All these difficulties were immediately overcome, and a large-sized catheter could be ever afterwards introduced with perfect facility. The offensive ammoniacal condition of the urine gradually abated, that fluid assumed a normal character, and the bladder being no longer irritated by its retention, the intervals between the times of micturition were prolonged. In a word, the patient was restored to complete comfort without having been detained in bed more than a day, and without experiencing a single unfavorable symptom; indeed, he did not suffer in the same ratio as during the attempt to simply introduce a catheter. To those who are uninitiated in the treatment of stricture, it might appear that, by keeping a catheter in the bladder, and daily increasing the sizes, the same results would have been obtained, but

experience proves this plan of treatment to be utterly futile, and that as soon as the catheter is removed, so soon does the stricture return.

Mr. Holt believes that there is no class of stricture in which the proposed treatment is inadmissible, and he contrasts the invariably favorable results he has experienced with the unsuccessful and occasionally fatal consequences of cutting operations in the perinæum, &c.

It has, we believe, been objected to this method of dilatation, that it is not the stricture which is split, but that the elastic and healthy portion of the urethra is dilated, and probably ruptured. Mr. Holt informs us that he has fortunately never had an opportunity of examining the results of the treatment post mortem; he has, however, ingeniously done the next best thing, that is, he has split a stricture on a dead subject, and given us the appearances so produced in a lithographic plate. The two strictures which had existed in this case are seen split open in the floor of the canal, the rent being directly in the median line, and limited to the extent of the obstruction. The contiguous structures were uninjured, and the divided mucous membrane gaped to an extent sufficient to permit the passage of a large bougie. Thus it appears that the actual stricture, having lost its elasticity, is ruptured by the force applied, whilst the remaining elastic portion simply undergoes temporary dilatation. The rent not extending beyond the sub-mucous tissue, there is a perfect immunity from extravasation of urine.

The Functions and Disorders of the Reproductive Organs in Childhood, Youth, Adult Age, and Advanced Life; considered in their Physiological, Social, and Moral Relations. By WILLIAM ACTON, M.R.C.S., formerly Externe to the Female Venereal Hospitals in Paris. Third edition, entirely re-written. (8vo, London, Churchill, 1862.)

This is a third and considerably enlarged edition of the well-known work, in which Mr. Acton discusses the physiology, and, so to speak, the psychology of the reproductive system in man, rather than the pathological changes to which the generative organs are liable. The normal and the disordered conditions of the sexual organs in childhood are first investigated, and the following remarks are well worthy of notice:

"PREVENTIVE TREATMENT.—My own opinion is that a long prepuce in children is a much more frequent cause of evil habits than parents or medical men have any idea of. The collection of smegma between the glans and the prepuce is almost certain to produce irritation. But I have never heard of any steps ever having been taken by those having the care of youth to induce boys to adopt proper habits of cleanliness in this respect. Children are educated to remove from every other part of their bodies (where it is of less importance in its consequences than it is here). But probably no nurse, parent, schoolmaster, or even doctor, would at first relish the proposal that a boy of twelve in his bath should be told (for if not told he will

never do it) to draw back his foreskin and thoroughly cleanse the glans penis every day. In my own experience of children, I have found this practice so beneficial, that I never hesitate to recommend it in any cases where there is the least sign of irritation from this cause.

"The only objection to recommending, and even enforcing, this thorough cleanliness in early childhood is that you run the risk of directing the boy's attention to manipulations, which may excite sexual desires. My own experience in practice all points the other way. Of course it is only when a child has already evinced some irritation of the parts or other derangement in the natural condition of things that any manipulation at all is advisable, or, indeed, that any occasion for peculiar cleanliness arises. And, when any such irritation or derangement exists, if the proper steps (of which cleanliness is the most effectual) are not taken to check it, the child will in ignorance handle the organs, and the dangers arising in this way are much greater than those attendant on mere ablution, especially in cold water. The cases in which an operation may be required on the prepuce are for the surgeon's decision."

Mr. Acton wages a constant war against that mock modesty which would ignore, though it cannot prevent, evil practices.

"A vigorous healthy boy is not likely to have any tendency to debase himself, and it is a question with many if it is well (on his going to school) to caution him against the vile habit of masturbation and its consequences. My own impression long was, that it would be a pity to poison the mind of a high-spirited lad with any cautions about vile practices; but the confessions of many, who, in ignorance of the results, have, by the example of others, been led to practise masturbation, have very much altered my opinion; I believe that in many cases a parent *should* at least hint to his son that he may very possibly have to witness infamous practices, and conjure him at once manfully to resist and oppose them, pointing out at the same time the consequences to which they tend. Of course he runs the risk of tainting an ingenuous mind when he broaches such a subject, and unfolds before it this distressing page in the book of knowledge of good and evil. But when it is needful he should in my opinion accept the grave responsibility, for knowing what I know, and seeing what I see, I could not face the greater unknown ill of dismissing my child to the probability of contamination by those whose corruption has but lately gone before, without an attempt to save him. I esteem it false delicacy and a wrong, that a parent should demur to accept the office of exponent, when he can, at the most, anticipate by a few days or weeks the offices of a schoolmaster in vice, as ignorant of consequences as the pupil, and unable to administer the antidote with the poison.

"The exposition would not often be so unintelligible to a child as is sometimes supposed. Parents are often disinclined to acknowledge that their children can have any information on sexual matters. They should bear in mind that although the father may have omitted to allude to sexual matters, yet that a mere child with its keen curiosity, and eyes always on the alert for anything new, may acquire in a very short time an astonishing amount of information even about sexual

matters—quite sufficient at any rate to be very dangerous to him if not guided and corrected by the wise precautions of his parent.

"It is, indeed, hardly possible to keep children ignorant, and therefore, where the likelihood is so great that a boy will learn for himself, or as soon as he goes to school, be taught, all sorts of information on sexual subjects, I would put it to any parent whether he would not rather be his boy's instructor, than leave him to his own fancies, or the possible misleading of foolish or wicked companions. Whatever is the best course for ordinary children, on one point my mind is fully made up. If I saw a child of a few years old, paying attention to female children only, and toying with them, I should watch over his future most anxiously. On the occurrence of any symptoms of debility, paleness, or ill-health, my vigilance would be still greater, particularly if I saw any development of the *idées génésiques*, as Lallemand calls them. In such a case, I should have no hesitation in calling the precocious child's attention to the pitfall yawning before him, fully convinced that not only could advice do no harm, but that I should not be teaching such a lad what he ought not to know by calling his attention to sexual subjects. I am of opinion that I should but anticipate the natural curiosity of such peculiarly organized children, who early acquire, from the habit of watching animals, and reading books that come in their way, a smattering of knowledge which excites their feelings, but which teaches them nothing of the ill consequences of the only sexual indulgences they can practise at this early age. To suppose that a parent can keep such a sexually disposed child from a knowledge of much that he had better not be acquainted with, shows a grievous ignorance of the infantile mind. But this mind may be regulated, and the dangerous consequences of the practices may be pointed out."

Entire continence from sexual indulgence in youth and early manhood receives the author's warmest support, and the whole of the chapter is one which young men would do well to read and consider. Mr. Acton believes, and we believe he is correct, that the number of perfectly continent men is larger than is generally supposed, and that because the unfettered indulgence of unbridled lust has become the rule of society, all those who indulge their passions hold that every one else imitates their example as a matter of course. That absurd quasi-physiological argument so rife among medical students, and *dilettanti* philosophers, viz., that frequent use is necessary for the due preservation of the organs, receives the following animadversion:

"Not the least of the difficulties in the way of maintaining continence, especially in the case of those who have not always maintained it, is the fear that if the organs are not regularly exercised, they will become atrophied, or that in some way impotence may be the result of chastity. This is the reason, men say, why they commit fornication. There is not a *greater error* than this. As well say that it is necessary to eat or walk all day, lest the muscles become absorbed. There is no physiological truth in this want of exercise of the sexual organs. In the first place, I may state that I have never seen a single instance of atrophy of the generative organs from this cause. I have witnessed, it is true, the complaint alluded to—but under what circumstances

does it occur? It arises in all instances from the exactly opposite cause—abuse: then the organ ceases to act, and hence arises atrophy. Physiologically considered, it is impossible, as I have stated above, that the sex-passion should be annihilated in well-formed adults. The function goes on in the organ always, from puberty to old age. Semen is secreted sometimes slowly, sometimes quickly; and very frequently under the influence of the will. We shall presently see that when the seminal vessels are full, emission at night is not unfrequent. This will suffice to show that the testes are fully equal to their work when called upon. No continent man need be deterred by this apocryphal fear of atrophy of the testes from living a chaste life. It is a device of the unchaste,—a lame excuse for their own incontinence, unfounded on any physiological law. The testes will take care that their action is not interfered with.

"That continence is not followed by impotence is shown most forcibly in animals. Mr. Varnell, Assistant-Professor at the Veterinary College, told me of an entire horse, kept by a friend of his for hunting. This animal was never allowed to have mares, yet he was quiet in their presence, and hunted regularly. When twenty years old, he was allowed to mount mares for the first time, and became a sure foal-getter."

The disorders of youth are fully considered, first the terrible results of long-continued masturbation, as affecting the general health, and afterwards as influencing the mind. Dr. Ritchie's pamphlet, 'An inquiry into a frequent cause of insanity in young men,' is laid under contribution in support of the author's views.

The normal functions and the disorders of adult life receive the author's attention, and the whole question of marriage and marital duties is fully discussed. There can be no doubt that gross ignorance exists upon this subject, and many of the author's *dicta*, if attended to, would ward off much domestic misery.

"The lengths to which some married people go is perfectly astonishing. I lately saw a married medical man, who told me that for fourteen years, he believed, he had *never* allowed a night to pass without having had connexion, and it was only lately, on reading my book, that he had attributed his present ailments to marital excesses. The contrast between such a case as this, where an individual for fourteen years has resisted this drain on the system, and that of a man who is, as many are, prostrated for twenty-four hours by one nocturnal emission, is most striking. This great disparity is further discussed at page 141. All experience, however, shows that, whatever is the condition of the nervous system, as regards sexual indulgences, excesses will sooner or later tell upon any system, and can never be indulged in with impunity. I believe them to be a common and very fruitful cause of ill-health, and hardly yet sufficiently appreciated by the profession.

"I will give one more instance. A medical man called on me, saying he found he was suffering from spermatorrhœa. There was general debility, inaptitude to work, disinclination for sexual intercourse, in fact, he thought he was losing his senses. The sight of one eye also was affected. The only way in which he lost semen was, as he thought, by a slight occasional oozing from the penis. I asked him at once if

he had ever committed excesses. As a boy, he acknowledged having abused himself, but he married seven years ago, being then a hearty, healthy man, and it was only lately that he had been complaining. In answer to my further inquiry, he stated that since his marriage he had had connexion two or three times a week, and often more than once a night! This one fact I was obliged to tell him, sufficiently accounted for all his troubles. All his symptoms were similar to those we find in boys who abuse themselves. It is true that it may take years to reduce some strong, healthy men, just as it may be a long time to prejudicially influence some boys, but the ill effects of excesses are sooner or later sure to follow.

"Since my attention has been particularly called to this class of ailments, I feel confident that many of the forms of indigestion, general ill-health, hypochondriasis, &c., depend upon sexual excesses. The directors of hydropathic establishments, it would seem, must have had some such opinions, or they would not have thought it expedient to separate married patients when they are undergoing the water treatment. That this cause of illness is not more widely acknowledged and acted on arises from the natural unwillingness which medical men feel to put such questions to their patients as are necessary to elicit the facts."

False and true impotence occupy a chapter, and we quote a part of the author's views on the treatment of the latter.

"The proper treatment is, then, no longer a problem of such extreme difficulty. Where impotence is curable at all, the general rules as to the requisite treatment can be comprised in a very few words. To give the system rest—to improve the general health, so that the nervous centres shall have time, opportunity and encouragement to rally, if it be possible;—to invigorate the muscular powers, so that both voluntary and involuntary muscles may regain their tone—are among the most important maxims to be borne in mind; at the same time it is necessary to avoid as much as possible any local or other stimuli which merely excite without strengthening. In any curable case it is probable that the nervous system has been over-excited beyond the natural limits which a phlegmatic constitution imposes. The one object is to restore the nervous power, or rather to allow it to restore itself—not to excite or exhaust it still further. The diet should, I need hardly add, be of the most wholesome and nutritious kind; but we should not forget the true old proverb—'*Sine Cerere et Bacco friget Venus.*'

"Hitherto I have spoken of the *general* treatment of impotence; in other words, of the best means of improving the health. By doing this, the sexual organs will, probably, in all simple cases, become, in common with other functions, equal to their duties. Some, however, not content with these simple means, have devised remedies for the purpose of *stimulating* the flagging powers. No doubt can exist that in certain persons, when the affection arises from some temporary cause—more especially in the timid, hypochondriacal, and those suffering from mental disquietude, the employment of stimulants may be very proper. But though this treatment is sometimes justifiable and advantageous, it is most unscientific and dangerous in other cases—

particularly in those of general prostration—so to stimulate the organs as to produce emission. Here it can only aggravate the mischief; whereas, had the general health been first improved, the local disorder next relieved, and subsequently a stimulant given, we could understand the formula. Such should be the true method of effecting a cure; and I shall attempt to show here the principles which should guide its application. Had these principles been more generally known, many of the invalids we meet with would have been rescued from much physical and mental suffering."

Spermatorrhœa is held by Mr. Acton to be a veritable disease, though he quite allows the existence of much ignorance and knavery on this subject. Generally the result of abuse of the sexual organs in some form or other, the treatment must often be as much of a moral as of a physical character.

"I need hardly say that my object in here shortly sketching the treatment of an ordinary case of spermatorrhœa is not to gratify prurient curiosity, and still less to encourage patients who suffer, or fancy they suffer, from the disease, to endeavour to treat themselves. I do it because I believe it is better for the truth to be known, and because such ruinous harvests have been made out of public ignorance on the subject.

"The first consideration in dealing with any case of spermatorrhœa is to ascertain from which more especially of its many symptoms the patient is suffering. Each patient may complain of some particular or well-marked symptom, to the exclusion of all the others, though the affection itself may consist of a lesion of more than one function. It is, therefore, of great importance that this distinction should be clearly understood. According as one or other of the functions (*e. g.* erection, emission, or the character of the emitted semen) is affected, so must be the treatment; as what may be good in one case, may not be applicable in the other. Having heard what particular symptom the patient complains of, he should be desired to make water into a glass, which should be deposited at once in a stand, to be examined at leisure. It is well, at the same time, to pass an olivary bougie, in order to ascertain the susceptibility of the urethra—an excellent means of arriving at an accurate diagnosis of the local state of the mucous membrane. In order to cure the affection, it is of more consequence to ascertain the *immediately* inducing local cause than the *primary cause* which may have originated the lesion.

"Before attempting the *curative* treatment, the preventive one should be commenced. It should be ascertained if bad habits exist, and, if so, whether they are likely to be left off. Moderation in sexual indulgence, if not abstinence, should be enjoined, and, if necessary, a promise to that effect obtained. Should masturbation still be indulged in, or should the patient be still under the influence of venereal excesses, no local remedies will relieve the complaint, unless we can induce or compel a total change in his habits. It should next be ascertained whether constipation or ascarides exist, or if the patient suffers from varicocele. If this latter complication be present, a suspensory bandage must be worn, or, what is still better, a varicocele-ring, which the surgeon may teach the patient how to put on. The ring may be

attached by a little piece of thread to some portion of the dress, otherwise it may readily slip off and be lost, and the parts be left without support during exercise.

"The surgeon has next to determine whether the vesiculæ seminales are labouring under any of the forms of irritation or inflammation spoken of in preceding pages, and, if so, whether the evil may not be kept up by some of the numerous causes which, as we have seen, produce or aggravate them. He must at once do his utmost to prevent emissions taking place, and, to effect this, must have recourse to all the means spoken of at page 142. In most cases complicated with local irritation, it would be nothing but waste time to try a variety of remedies which are more or less useful, until the most valuable, and in some cases the only means, of overcoming the local evil has been used—I mean cauterization."

The use of a fluid caustic, by means of a syringe, is preferred to that of the solid nitrate of silver, and the author's account of the results of the treatment are most satisfactory.

The concluding section, from which we extract the following, describes the functions and disorders of the reproductive organs in old age:

"There are persons in society, it cannot be concealed (although fortunately they are few), who come to the surgeon ostensibly for other reasons, but virtually under the belief that he will excite their flagging powers. I have already alluded to these cases, and fully described the language which the profession does and should hold towards them.

"In all such cases, the man advanced in life should be at once told that, although his powers are somewhat enfeebled, no immediate mischief has yet occurred (if the surgeon can conscientiously say so)—nature only wants rest, and all will be well. It is of great importance that the sexual fears of the elderly person should be quieted. We have seen, in previous pages, the influence of the imagination on the sexual ideas. As age advances, this effect grows still stronger—it is of primary importance that the *morale* of a man should be strengthened—and I at once tell these patients most positively, that I can relieve their present sufferings: but if I undertake to re-establish their sexual powers, I exact a promise that such convalescence shall be attended with great moderation—on no other terms will I undertake the case; for I tell them it is a better guarantee for their life and happiness to remain invalids as they are, than to have their organs strengthened and then to kill themselves by inches through fresh fits of excitement. I need hardly say that every upright practitioner refuses to be an accomplice in any way whatever to mere excitement. Libertinage is, they should be told, bad enough at any age; in the elderly man it is a crime, and one that the surgeon will not lend himself to abet. This language held to elderly men is good in more ways than one; it 'pulls them up' at a moment when they are disposed to go astray, and it shows them that the surgeon has implicit belief in his powers of cure, and that he can re-establish their health; but will not build it up for them to pull down. It can shock no 'man

of the world;' many take it in good part, and common sense tells them they must follow the advice.

"Experience has taught me how vastly different is the situation of the class of moderate men, who, having married early, and regularly indulged their passions at longer and longer intervals, seldom come under the medical man's notice—with whom excesses are exceptional, and who are equal to the sexual shock—from that of widowers of some years' standing, or men who have, through the demands of their public or other duties, been separated from their wives for prolonged periods. When the latter class, after leading lives of chastity, suddenly resume sexual intercourse, they are apt to suffer greatly from generative disorders. The sudden call on the nervous system, after years of rest, gives a shock to any constitution, and especially to such as are already depressed, as, for instance, by the usual effects of residence in the East. These cases require great care, and their successful treatment must mainly depend on the conduct of the patient, who, by irregularities of his own,—which would appear no more than moderate in persons thoroughly sound,—may altogether frustrate every attempt to relieve him."

III.

REPORT ON MIDWIFERY.

On Surgical Diseases of Women. By I. Baker Brown, F.R.C.S., Surgeon to the London Surgical Home for Diseases of Women, &c. Second edition, revised and enlarged. (8vo, London, Davies, 1861, pp. 410.)

In this edition, Mr. Brown has not only revised the matter previously published, but has added much that is new, while he has given his work an eminently practical character by the enumeration of a large number of cases. Thus, the chapter on rupture of the perinæum has been carefully brought up to the date of publication, and the operation for its cure illustrated by eighty-one cases, in the place of eighteen, as in the first issue. So, in the account of that formerly most intractable lesion, vesico-vaginal fistula, we find many new suggestions and observations; the bearing of these being illustrated by the histories of forty-two cases which have fallen under the author's care. In the way of actual novelty, the chapters or sections on intra-uterine fibrous tumours, on hypertrophy and irritation of the clitoris, on cauliflower excrescence of the uterus, on certain diseases of the rectum producing or simulating uterine disorder, and on some surgical lesions connected with sterility in the female, may be especially noticed.

A careful perusal of Mr. Brown's work has satisfied us that it contains much matter which is deserving of praise. At the same time, there are some recommendations and observations to which exception may be taken. With no chapter, perhaps, should we be inclined to find greater fault than with that on stone in the female bladder. In the remarks on the treatment of this affection, four plans for the removal of the calculus are noticed. These are lithotomy, dilatation of the urethra, incision of the bladder through the vagina, and lithotrity. The usual method of performing *lithotomy* is to incise the anterior margin, and then to dilate the remaining portion of the urethra until the finger can be passed into the bladder. The objection to this proceeding, and it appears to be one which ought to forbid the performance of the opera-

tion, is the fear of permanent incontinence of urine resulting. *Dilatation of the urethra* is easily effected, so that a large stone may be extracted. Unfortunately, however, it is also sometimes followed by incontinence of urine. Mr. Brown asserts that this untoward result never occurs when the dilatation is effected under chloroform, and he thinks this may be accounted for on the following grounds:

"When the dilatation has been a tedious and painful process, it has at length been accomplished (physiologically) by exhausting the irritability of the fibres, and thus rendering them powerless for the time; or (mechanically) their structure may have given way under tension; or both these circumstances may have occurred; and in either case, subsequent imperfect contraction, and consequent incontinence, are perfectly explicable. Whereas under chloroform there is no wasting or bearing-down of the local nervous irritability, nor, as the rigidity of the canal is destroyed, is there any danger of laceration; there is, therefore, no probable cause for the subsequent production of incontinence. I state these things advisedly, and after considerable experience, having had frequent occasion to dilate the female urethra, not only in cases of stone in the bladder, but in operating for vesico-vaginal fistula." (p. 224.)

Although Mr. Brown states his theory advisedly and after much experience, yet we venture to think that it is unsound. Two years ago, we saw the female urethra cautiously and slowly dilated for the removal of a calculus of moderate size. The patient was thoroughly under the influence of chloroform from the time the instrument was introduced into the urethra until the stone was withdrawn. Yet she has ever since suffered from complete inability to retain the urine. If only one operation in ten have this untoward result, we say that this proportion is sufficient to render the proceeding unjustifiable.

When the stone is large, Dr. Marion Sims has recommended *incision of the bladder*. The surgeon cuts through the vagina, low enough down to avoid the peritoneum, into the bladder upon a staff introduced through the urethra. The stone is seized and removed, and the edges of the wound are then brought together with metallic sutures, and the same treatment pursued as after the operation for vesico-vaginal fistula. This proceeding has the approval of Dr. Bozeman and Mr. Erichsen; and Mr. Brown, feeling "convinced of its utility and advantages," intends to put it in practice when he encounters a proper case. We can only say we are sorry for it, and we think that those surgeons who know the tedious nature of the after-treatment required in cases of vesico-vaginal fistula, and the fear that all the opening may not heal at the first operation, will echo our regret.

Lithotrity remains to be considered, and it is remarkable that Mr. Brown only incidentally alludes to this simple operation. Perhaps he thinks it unworthy the serious attention of the surgeon, but we entertain an opposite opinion. We would rather say that it is, in forty-nine cases out of fifty, the only operation which should be resorted to, for the removal of a calculus from the female bladder. It is unfortunate, no doubt, that lithotrity is performed with comparative ease; that no *éclat* attends the proceeding; and that there is no large stone to hand over to the patient for subsequent exhibition to admiring friends.

But, on the other hand, it has one or two advantages, the chief being that it may be practised almost without danger, and that there is not the slightest fear of the patient afterwards suffering from incontinence of urine. It has, we confess, surprised us that Mr. Brown has failed to notice how peculiarly the formation of the female urinary organs favour the performance of this operation. Yet he neither points out this circumstance, nor does he favour us with his objections to crushing the stone, if he entertain any. This gentleman may, perhaps, point to the writings of some eminent surgeons which are as amenable to our censure as his own. But it is to be remembered Mr. Brown has laboured hard and successfully to improve the treatment of the diseases of the female generative organs; and it is perhaps because we owe him so much, that we wish to see his book as perfect as possible. The surgeon who performs an operation cleverly deserves less credit than he who cures his patient without resorting to the knife. For although the introduction of chloroform may have taken away much of the terror which formerly attended the proceedings of the surgeon, yet we do not know that this agent has materially lessened the risk which accompanies every cutting operation.

On the Signs and Diseases of Pregnancy. By THOMAS HAWKES TANNER, M.D., Assistant-Physician for the Diseases of Women and Children to King's College Hospital, &c. (Post 8vo, London, Renshaw, 1860, pp. 504.)

In this work Dr. Tanner has endeavoured to give a concise but clear account of all that is at present known with regard to the signs and diseases of pregnancy, illustrating the subject, as far as possible, by the clinical history and treatment of many important cases. The treatise is divided into twelve chapters. These are severally devoted to the consideration of interesting general questions connected with pregnancy, to the signs and symptoms of this state, the diseases which simulate it, its duration, and the various troublesome disorders which complicate it. There are also chapters on abortion, extra-uterine gestation, superfœtation, and missed labour. The different substances which may be expelled from the uterus, and which may be mistaken for the products of conception, are treated of; and the book concludes with a chapter on the displacements of the gravid uterus.

As it is not possible to give a critical analysis of these chapters within a moderate compass, we shall content ourselves with quoting some remarks on the mortality in childbirth. Dr. Tanner refers with feelings of gratification to the fact, that whereas in 1847 the birth of every 10,000 living children was the death of 60 mothers, in 1857 it was only fatal to 42. Consequently 18 mothers are now saved in every 10,000 children born. Since 1848 the decline in the mortality seems to have been progressive, the numbers per 10,000 being 61, 58, 55, 53, 52, 50, 47, 47, 44, and 42 in 1857; in which year 663,071 children were born alive. He then goes on to show that this happy result is not accidental, but is in a great measure due to the progress of science. At the same

time, increased exertions on the part of obstetric physicians are needed; for, as he remarks, it must still be calculated "that at least 3000 women in the prime of life perish annually in England and Wales from childbirth." In considering how this mortality is to be diminished, Dr. Tanner advises that greater attention be paid to the health of women during the whole period of pregnancy. He then proceeds thus:—"On two points I entertain a very positive opinion, the fruit of much consideration and no small amount of actual experience. First, that no progress will be made by substituting the attendance during pregnancy and parturition of even properly educated midwives for physicians and surgeons, unless that judgment, courage, power of endurance, and capacity for acting well and promptly on an emergency, which distinguishes the one sex, can be given to the other. And secondly, that it will prove a retrograde step to attempt to *harden* the system in pregnant and parturient women, or to treat them with less watchful care than they now generally experience. It has been sometimes erroneously thought that because the parturient process in domesticated animals is easy or difficult, in proportion as they are subjected to a life of toil, so a similar law must apply to the human subject. But the experience of every obstetrician who has practised both in St. Giles's and in St. James's will rebut this opinion. The cow in the country farm, living unfettered in the meadow until the day of calving, has in general a safe and easy labour, while the poor beast which is kept in a town dairy has a time so incredibly dangerous, that the proprietor generally sells off his stock every year, and replaces it with cows in calf, which are not put into the stalls till within six or eight days of the expected period of parturition. The correct deduction from this is, that an artificial mode of life—a life maintained by improper food, and without a sufficient supply of pure air, or a due amount of exercise—has a most deleterious influence upon the process of labour; and not that a toilsome existence, embittered with all the pains and anxieties of poverty, gives comparative immunity from danger in the hour of parturition. The best step that can be taken, in addition to those already recommended, to render the time of pregnancy and parturition in women less dangerous than it is now, is to lay the foundation of a sound and vigorous constitution in early life. If the present race of mothers can but be taught to rear and educate their girls in accordance with the simple teachings of science and sound common sense, the future mortality in childbirth will be materially lessened. Instead of being so anxious to provide their children with wealth and to cram them with learning at any cost, let the parents consider how much more important it is to devote some time and attention to securing for each of them a sound and robust constitution; for the words of the son of Sirach are undoubtedly true, that—"Health and good estate of body are above all gold, and a strong body above infinite wealth."

One prime feature in Dr. Tanner's volume is the care which is paid to the treatment of the various disorders of pregnancy. In his remarks on this subject he shows that too much importance must not be attached to the administration of medicines, and he points out how suffering may be alleviated by attention to a number of little matters, sometimes thought hardly worthy of notice.

On Diseases peculiar to Women; including Displacements of the Uterus. By HUGH L. HODGE, M.D., Professor of Obstetrics in the University of Pennsylvania. (Large 8vo, Philadelphia, 1861, pp. 469.)

This treatise has been written by Dr. Hodge at the request of many of his pupils; but though it is evidently the fruit of much hard work and practical experience, yet we fear it will scarcely be as useful to these gentlemen as could be desired. For in over-anxiety to make his subject clear and simple, the author seems to us to have produced a most complicated manual, and one which it is difficult to read with anything like pleasure.

Dr. Hodge divides his subject into three parts:—the diseases of irritation, the displacements of the uterus, and the disorders of sedation. In the first, all those affections which are attended with pain in the uterus or elsewhere are considered. In the second, the various malpositions of the uterus are treated of; as well as such subjects as fibrous tumours, displacements of the vagina and bladder, and diseases of the ovaries. While in the third division we find those affections connected with a depression of the organs or animal actions, or of both.

The *disorders of irritation* occupy a large space in the volume. Dr. Hodge entertains an idea (he calls it "a general truth"), that as organic irritation causes inflammatory congestion, so nervous irritation gives rise to simple congestion. In illustration of this distinction he says:—"Mental and moral affections excite the brain, and powerful passions, as anger, irritate this organ; not as the subject of organic life, but as the subject of animal life, as a medullary mass. The excitement or irritation often appears and disappears without any appreciable disturbance of the circulation. This, therefore, is nervous irritation. In this case it is manifested by the exercise or disturbance of the mental faculties, by the expression of the eyes, face, or by corresponding words, motions, &c. No one can doubt, in such a state, the existence of cerebral excitement, although we can form no definite idea of its nature. We are as ignorant of all the ever-varying, inscrutable, inconceivable changes of this wonderful organ of mind and body, as we are of life itself. As we employ the word *life* to express a distinction between a living and a dead being, so we employ the word *nervous excitement, or irritation*, to express the distinction between the quiescent and the active condition of the cerebral tissue. We explain nothing, we simply express a fact. We assert, also, by this expression, that it is not an organic irritation; not an irritation of the vegetable life of the brain, of its blood-vessels, its secretions, its nutrition, but an irritation of its animal life. This nervous irritation being continued or enhanced, involves, in some way, the circulation; the blood rushes to the organ with the phenomena and consequences already detailed. We have, therefore, the mental passion as an irritant, producing a nervous irritation of longer or shorter duration, then acute congestion. Without the irritation of the mass there would have been no congestion. The congestion, therefore, strictly is not the disease, which is the irritation, and the afflux of fluids is merely a symp-

tom, however dangerous or fatal this symptom may prove. A scientific treatment, therefore, is not completed by removing the congestion, but demands that attention be paid to the primary state, to the real disease. Innumerable examples from the history of cerebral affections indicate the truth of this statement. Nervous irritation, confessedly, exists in nervous headaches, with as well as without congestion. It precedes, therefore, the congestions which occur in infantile convulsions, from whatever cause; as well as in epilepsy, in hysteric and apoplectic convulsions, &c." (p. 32.)

Having drawn this distinction between inflammatory and simple congestions, the author proceeds to show that the hysterical or the neurotic diseases of women are states of irritation of the cerebro-spinal nervous system; and he then takes up the subject of irritable uterus, and devotes nearly 200 pages to considering it from every possible point of view.

The importance of carefully recognising and treating the various *displacements of the uterus* can hardly be over-estimated, if Dr. Hodge's opinions are correct. He observes:

"The *practical deductions*, as confirmed by long-continued experience, seem to the author inevitable, that malpositions of the uterus are so intimately connected with all the phenomena of irritable uterus, as original or aggravating causes, as to make their removal generally absolutely necessary for the restoration of the organ, and of the cerebro-spinal system to its normal state; that dysmenorrhœa, menorrhagia, and leucorrhœa, the pelvic sufferings, the inability to walk or stand, the spinal and cerebral irritations, with all the occasional but terrible disturbances of the larynx, lungs, heart, stomach, liver, kidneys, and bowels —especially the rectum—can hardly be completely relieved, and sometimes not even palliated, if the displacement be permitted to remain; but, on the contrary, if this be removed, recovery will generally quickly follow." (p. 271.)

The remedy for these very serious evils is a simple one. It has failed in our hands to accomplish a tithe of the good promised by Dr. Hodge; but others may, perhaps, resort to it more successfully. "The lever pessary," says the author, "will more slowly accomplish the restoration of the displaced organ, but, eventually, with equal certainty. It does not necessarily produce any irritation, organic or nervous, or any leucorrhœa, menorrhagia, inflammation, &c. It can be worn at all times, night and day; it interferes with no motion and no function; the patient has no attentions to pay to it, excepting a daily vaginal wash; she may, and often does, forget its presence, can enjoy her connubial pleasures, can move about in society without anxiety, is free from local and general nervous irritation, from corporeal, intellectual, and spiritual disturbance; and her physician may hope, that the uterus being perfectly sustained, the ligaments, now free from every counteracting influence, will continue to contract to their normal length, and acquire their original tonicity, so that a permanent cure may be effected, or, that pregnancy ensuing, the continued use of the pessary will preserve his patient from those irritations so frequently excited by displacements, and so apt to result in abortions." (p. 350.)

The term *sedation* is employed to denote that condition of a part or of

the whole of the system directly opposed to excitement or irritation. Inasmuch as irritation is an increase of the vital phenomena or actions of a part, so sedation is a decrease of these phenomena. As it seems impossible to give a fair epitome of the author's views on this subject, we must refer the reader to the work itself for an account of them. For our parts, moreover, it must be confessed, that our courage has rather failed us; and we have shrunk in dismay from following the author through the pages devoted to organic sedation and nervous sedation, sedation from moral causes and sedation from physical causes, the influence of nervous sedation on organic actions, and the influence of organic sedation on nervous actions, and so on.

We are sorry to be obliged to speak thus of Dr. Hodge's labours, because they have evidently cost this gentleman much time and labour. But when a book is designedly written for young men learning their profession, and is intended to be their guide in studying a most important department of practice, it is necessary for the critic to speak the truth, even if it should prove somewhat unpalatable. The author has certainly shown that he possesses a vast fund of information upon the diseases of the uterine organs; and doubtless if he could be less ambitious, and would adopt a more simple style, he might produce a very useful volume. In this country young men are very impatient of anything like pedantry, and will only study those authors who can write in a pithy straightforward way. A discourse which at all resembles Gratiano's in the proportions of wheat and chaff which it contains, is sure to be neglected.

A Statistical Inquiry into the Causes, Symptoms, Pathology, and Treatment of Inversion of the Womb. By Dr. CHARLES A. LEE, M.D. ('American Journal of the Medical Sciences,' October, 1860.)

In this essay the author has collected the histories of 148 cases of inversion of the uterus, an accident so rare that many practitioners in a life-long practice have never met with an instance. According to Dr. A. Lee the annals of the Dublin Lying-in Hospital and of the London Maternity Charity together, do not show a single instance of it in a total of more than 140,000 labours.

In analysing the 148 cases, we find the cause mentioned in only 62, of which 39 were attended by midwives, mostly in Europe. The inversion was produced by pulling on the cord in 39 cases, and in 7 from attempts to deliver the placenta. In 25 the delivery was very rapid; while with several, the adherent placenta and inverted uterus simultaneously accompanied the expulsion of the child. In 20 cases there were symptoms of uterine exhaustion, so that the inversion was favoured by extreme relaxation, or want of contractile power in the organ. In 10 the cord was very short, and in several twisted round the neck; 2 were cases of forceps, one of twins; and 23 were primipara. Again, in 23 the inversion was spontaneous, *i. e.* there was no interference or assistance on the part of the practitioner.

In 108 instances the inversion was said to be complete, and in 18 it

was cited as partial. In 67 out of 142 examples the placenta was adherent; there was severe and copious hæmorrhage in 49 out of 102, and moderate hæmorrhage in 17. In 7 examples the inverted uterus was mistaken for polypus, and in 4 owing to this error, the organ was ligatured, with two deaths resulting. Polypus was mistaken for inverted uterus by Dr. Hugh Ley and Sir Charles Bell, and by Dr. Rigby. Some cases of inversion have been caused by the expulsion of polypi.

In 52 of the 148 cases reposition of the uterus was effected, a fatal result following in 7. Reduction has been safely performed in cases of seven and twelve years standing. In 3 of the instances reposition took place spontaneously.

The adherent placenta was removed before reposition in 31 of the 148 cases; in several of which unsuccessful attempts were made to replace the womb before separating the placenta. In 32 instances the inverted organ was removed by the ligature, of which number only 4 died. This rate of mortality is very far below what might be expected; and it proves that obstetrical writers have greatly exaggerated the dangers of this operation. The uterus was removed by excision in 14 instances, with 4 deaths.

As an addition to Dr. Lee's statistics, we have been favoured with the notes of two examples which occurred in Dr. Tanner's practice. The *first* case happened on the 2nd July, 1860, when this physician was sent for, as "a large tumour had been spontaneously expelled from the womb directly after the birth of the child," and the gentleman in attendance thought that it might be ligatured, or at once cut off, with advantage. The tumour proved to be the uterus completely inverted, with the placenta attached. The patient was very faint, but on peeling off the afterbirth only slight difficulty was experienced in effecting reposition. The *second* instance was on the 2nd August, 1860, a curious circumstance, as during eighteen years Dr. Tanner has met with no other cases. The patient, a primipara, was attended by an experienced student from King's College Hospital. On the birth of the child there was considerable flooding; and while attempting to check the hæmorrhage by removing the placenta, the uterus was completely inverted. Dr. Tanner took away the placenta and reduced the inversion. Both patients did perfectly well.

On a new method of Version in Abnormal Labour. By J. Braxton Hicks, M.D., F.L.S., Assistant-Physician Accoucheur at Guy's Hospital, &c. ('Lancet,' July 14th and 21st, 1860, and February 9th, 1861.)

In these communications Dr. Hicks describes a new method of turning the child in utero in labour, without the necessity of introducing more than two fingers through the os, chiefly by the assistance of the other hand, applied externally, pressing down the part required to present. He explains the principles upon which the treatment is based; and shows, after the long axis of the child is once made to lie transversely, it requires but a

very slight force to induce either end to present; and also that in the transverse position the knee is generally within easy reach of the os, consequently capable of being seized if required. He shows still further that by the plan suggested, if the knee or foot cannot be secured, nothing more is required than to depress the breech from the exterior still further into the pelvis, and then a foot will be at hand.

Dr. Hicks gives full credit to several German obstetricians for showing that it is possible to turn the child entirely from the outside, before the liquor amnii has escaped; and he notices that they have applied this practice to the rectification of malpresentations which had been detected before labour set in, but that it was considered not applicable to immediate labour.

The child has also sometimes been turned from the interior alone, by pushing up the head, then the shoulders, till ultimately the leg comes within reach. This was practised by Dr. Collins, of Dublin; and Dr. R. Lee, in his 'Clinical Midwifery,' gives instances of his having employed the plan. Still there is no certainty about the result; and it is not clear from the cases quoted that because the head ascended the breech should replace it, for a transverse presentation is as likely to follow.

The unassisted external method is equally uncertain, and almost impossible, except to those whose attention has been especially devoted to the recognition of the parts of the fœtus from without.

It is for these reasons that Dr. Hicks confidently recommends his method, and he directs the attention of the profession to three points—1st, the most certain method of operating; 2ndly, the general reasons of its superiority to other methods; and 3rdly, the cases to which it is more particularly, and also exclusively, adopted.

In considering the first point, viz., the most certain method of operating, it is necessary to remember the important fact, that if we place by any means in our power the fœtus in utero in a transverse direction with the abdomen downwards, the knees of the fœtus are opposite the os uteri; and if the os is large enough to introduce a finger, the knee can be hooked down and the presentation secured. Thus it is evident that it is merely necessary for the fœtus to assume the above position, where delivery by knee or foot is sought for, or where we wish that the delivery may be at our command.

The next point to be borne in mind is that, should the fœtus present by its back to the os uteri, the case would be very rare in which one side or the other was not the more dependent, and consequently one or the other knee be within finger-reach of the os.

The third fact is this, that the shape of the cavity of the fully developed uterus being oval, with the long axis placed vertically, the tendency of the slight pains towards the end of pregnancy is to place the longer axis of the fœtus in a corresponding direction; or, in other words, to cause it to present by the head or breech; so that if the fœtus be at any time situated transversely, a slight preponderance of force in either direction will be sufficient to determine the ultimate presentation.

These considerations being premised, the author proceeds to show that the method of turning which he has found successful, and very easy of

application, is conducted thus:—Suppose the simplest condition, a case where the uterus is passive, membranes unbroken, the liquor amnii plentiful, the os uteri expanded sufficiently to detect the presentation, which is cephalic, and in the first or fourth position (occiput to left side); the patient is in the ordinary position, the trunk curved forwards as much as possible, to relax the abdominal muscles. Introduce the left hand, with the usual precautions, into the vagina, so far as to fairly touch the fœtal head, even should it recede an inch. (This generally requires the whole hand.) Having passed one or two fingers (if only one, let it be the middle finger) within the cervix, and resting them on the head, place the *right* hand on the *left* side of the breech at the fundus uteri. Employ gentle pressure and slight impulsive movements on the fundus toward the right side, and simultaneously on the head toward the left iliac fossa. In a very short time the head will be found to rise and the breech to descend; the fœtus is now transverse, the knee opposite the os, the membranes may be ruptured, and the labour terminated as usual in turning.—In obedience to the law above stated, when the fœtus is placed transversely, a slight impulse will determine the final position of the head. When the leg is seized, it is therefore advisable to place the right hand beneath the head in its new position on the left side, and gently press it toward the fundus. The same law renders it very easy to convert the cephalic, shoulder, neck, or even transverse, into a breech case. In either of these, it is merely necessary to push up the head, and, removing the left hand from the vagina, without bringing down the knee or foot, place it on the breech in the right iliac fossa, so as to depress it into the cavity of the pelvis. No extra force should be used, for it will be found to obey a very gentle persuasion. In other presentations from the one supposed, the only changes required will be to make the pressure and impulses in opposite directions. When the exact position cannot be made out, treat it as the first or fourth. If the liquor amnii has escaped, though the operation is more difficult, yet even then it is easily managed, and if the *uterus be too active, suspend it for a moment by chloroform or opium.*

In considering, secondly, the general advantages of this operation over the ordinary method, Dr. Hicks disclaims all intention of unnecessarily depreciating an exceedingly valuable and ancient operation—one which has saved numberless lives, and one with which, at present, we cannot dispense. Still, if it can be shown that in a considerable number of cases requiring version, the operation can be accomplished as quickly, or even more so, without the necessity of introducing the hand into the uterus, with the exception of one or two fingers passed a little way into the os, it is clear that such a modification of this more or less hazardous operation will recommend itself. For by it we can avoid—

1. The addition of the hand, and perhaps arm, to the uterine contents; and the irritation, present and future, caused by it.
2. Entry of air within the uterine cavity.
3. Liability to rupture of uterus.
4. Much of the pain and distress felt in the ordinary plan.
5. The removal of the coat, and baring the arm of the operator; and, as a minor consideration—

6. The fatigue and pain endured by the operator while the hand is in utero.

The author thinks the removal of these objections a matter of considerable importance, even if option were given us in all cases; but more especially so when we add to this the power of being enabled to turn under circumstances totally impossible by the older method.

As regards the third point, viz., to what cases is the above method more particularly applicable, and to what conditions is it exclusively so? it is shown that it can be applied at the earliest period a malpresentation is discoverable. As soon as the finger can enter the cervix, so soon can version be performed, converting all forms into breech presentations. In malpositions of the head it may be found capable of improving its position without having recourse to complete podalic version. In puerperal convulsions it prevents the risk caused by the addition of the hand to the contents of the uterus: in narrow brims it saves the pressure upon the os uteri against the projecting parts of the brim; while in placenta prævia it enables us to obtain a firm compress on the bleeding part, as soon as the finger can enter the os and bring down a foot or knee.

The papers conclude with the history of several cases in which the practice advocated by Dr. Hicks was successfully adopted.

The Pathology and Treatment of Phlegmasia Dolens, as deduced from Clinical and Physiological Researches; being the Lettsomian Lectures on Midwifery delivered before the Medical Society of London during the Session 1861-62. By F. W. Mackenzie, M.D., Physician to the Queen Charlotte's Lying-in Hospital, &c., &c. (8vo, London, Churchill, 1862, pp. 131.)

Dr. Mackenzie has long devoted particular attention to the subject of phlegmasia dolens, and the present Lettsomian lectures may be taken as representing his matured views on the pathology of this interesting disease.

With the writings of Mauriceau, Deventer, La Motte, Puzos, and Levret, it may be said that the literature of this disease commences. Mauriceau's theory is the oldest. This physician having noticed that phlegmasia dolens often supervenes upon suppression or disturbance of the lochial discharge, attributed it to a retention of those humours which should thereby flow away, and their reflux upon the affected extremity. Then Puzos and Levret, having seen it follow upon a suppression of the lacteal secretion, conceived that it depended upon a metastasis of milk from the breasts to the limb. The next theory was propounded by Mr. White, of Manchester, who, in the year 1784, endeavoured to show that the proximate cause of the disease was an obstruction of the lymphatic vessels and glands of the affected extremity, tending to an accumulation of lymph below the seat of obstruction. In 1792, Mr. Frye, of Gloucester, published a modification of White's theory; and he asserted that the essence of the disease consisted not in an obstruction, but in a rupture of the lymphatic vessels at the brim of the pelvis, and in the consequent escape of lymph into the cellular tissue,

and its diffusion throughout the limb. Subsequently, Dr. Ferrier modified the views of White and Frye; and he attempted to prove that the affection consisted, not in obstruction or rupture, but in inflammation of the lymphatic vessels and glands. This theory was supported by Hamilton, Capuron, Gardien, and many other eminent observers. More recently still, Dr. Hall suggested that the disease was a general inflammation of all the different organs and tissues of the affected limb, owing to which coagulable lymph was largely thrown out into the cellular tissue, giving rise to the pathognomonic swelling and tension.

Lastly, a theory, founded upon anatomical evidence, was propounded by the late Professor Davis, in 1823, which attributed the disease to inflammation and obstruction of the chief veins of the extremity. This view was claimed for Bouillaud, and found an energetic supporter in Dr. Robert Lee. This phlebitic theory was the one generally accepted by the profession when Dr. Mackenzie commenced his inquiries. Allowing that it rests upon more valid grounds than any other hypothesis, Dr. Mackenzie thinks the question still remains,—How far does the existence of crural phlebitis, as an assured anatomical fact, adequately account for all the varied phenomena of the disease? In other words,—How far is phlebitis truly the proximate cause of the disease, or merely an important integral constituent of it; not, however, the *cause* of the other lesions common to it, but, like them, a parallel consequence of some more general and diffusive agency? To solve these questions was the object of Dr. Mackenzie's labours, and these are the conclusions to which he was finally led:

"1. Crural phlebitis, in a pure and uncomplicated form, cannot give rise to all the local and general phenomena of the disease, and therefore cannot be its proximate cause.

"2. Phlebitis itself is, for the most part, not a primary, but a secondary affection; and in the great majority of cases is a consequence of the circulation of impure or morbid blood in the veins.

"3. The proximate cause of the disease is, therefore, presumeably a morbific condition of the blood, which I have experimentally shown to be capable of producing not only the lesions of the veins met with in the disease, but all its other phenomena." (p. 6.)

Dr. Mackenzie next proceeds to examine his theory from a clinical point of view. He shows, from an analysis of sixty cases, that the left lower extremity is more liable to the attack than the right; that there is no particular period after labour which is peculiar to the attack, though in 47 cases out of 57 the disease set in within twenty-one days from delivery, a point favorable to its blood origin, since it is within this period that the greatest puerperal actions are inaugurated; and that in nearly all the cases the attack followed upon, or occurred in the progress of, some febrile disorder variously induced, especially some form of puerperal fever. There are two varieties of phlegmasia dolens, a simple and a complicated. The *simple* kind, almost devoid of danger, occurs chiefly during convalescence from some form of puerperal fever; or, in connection with large losses of blood, sustained either during or subsequently to labour, or with anæmia antecedently existing; or, as the result of exposure to cold during convalescence from childbirth; or

lastly, as the effect of a febrile state consequent upon some error or irregularity of diet. The *complicated* form sets in during the progress of some puerperal fever; in connection with pelvic inflammation or suppuration; with malignant disease of the uterus or pelvic organs; with such grave constitutional diseases as phthisis, diabetes, specific fevers, &c.; or with inflammatory disease of various important organs.

The chief local morbid appearances which have been found on *post-mortem* examinations are as follows:—the *areolar tissue* indurated and vascular; sometimes infiltrated with serum, lymph, pus, or a sanious fluid. The chief *veins* of the affected limb have, with few exceptions, been obstructed by one or more coagula, and their coats thickened and inflamed. In some instances, however, no obstruction could be detected in the femoral, external or internal iliacs, the profunda, or indeed in any of the veins. The *lymphatic vessels* have been noticed enlarged, sometimes infiltrated with serum or even pus, and occasionally matted together by condensed areolar tissue. So also the *lymphatic glands* have been much swollen, vascular, and purulent. An effusion of serum or pus has been found in some of the *joints*—those of the hip and knee, and the sacro-iliac synchondrosis. Sometimes the *arteries* of the limb have been unusually contracted; or the femoral artery, vein, and nerve have been agglutinated together. In very rare instances, the *muscles* have been softened, and even pultaceous in spots; while equally seldom the *integument* has become gangrenous.

From the author's second lecture, which is devoted to the details of numerous physiological experiments, we need only give the general conclusions which it seems may be deduced from them:—"We learn from one series of observations detailed," says Dr. Mackenzie, "that phlebitis may be produced, and occurs in a local or isolated form as the result of a local cause, as shown in the instances in which the crural veins were inflamed from the femoral to the cava by the application of a chemical irritant; and here all the genuine phenomena of phlebitis were produced, but none of the phenomena of phlegmasia dolens. But in another series of cases we find that phlebitis may be produced, and equally extensively, by vitiating the general mass of the blood; and here, in addition to phlebitis, we have superadded all the phenomena of phlegmasia dolens. The conclusion, therefore, that appears to me inevitable is, that phlebitis occurring as a local disease, and from the operation of a local cause, is never associated with the phenomena of phlegmasia dolens, nor under any circumstances can give rise to it; but that, when it arises from, or in connection with, constitutional causes, or from local causes calculated simultaneously to infect the blood generally, then that the lesion of the veins is very generally accompanied with the symptoms of phlegmasia dolens. The effective cause, therefore, of the phlebitis, as of the crural affection, is the constitutional condition out of which both have arisen; and phlebitis stands in no other relation to the etiology of the disease than in that of intensifying the local actions going on in the affected extremity, by concentrating upon it the general or diathetic conditions which may have given rise to it. Thus regarded, however, phlebitis plays a prominent, although subordinate, part in the phenomena of the disease. It intensifies the morbid actions going on

in the affected limb, but at the same time it does not create them; it is strictly a secondary effect, and, like the other lesions of the extremity, is a common consequence of the same constitutional or morbific causes which may be in operation, and upon which they both mutually depend." (p. 77.)

The concluding lecture is devoted to the practical application of the doctrines promulgated in the two previous discourses to the prevention and cure of phlegmasia dolens. As regards *prevention*, it is to be remembered that the puerperal state is one of increased or preternatural irritability. Hence while the practitioner must endeavour to tranquillise the nervous system, he must also attempt to invigorate it. All bodily irritation is to be averted; and care must be taken that there is neither retention of urine nor constipation. Dr. Mackenzie seems to object to the use of animal food and fermented drinks for the first three or four days after labour; but no small experience has long since taught us that in the great majority of cases these agents are more likely to insure the patient a favorable convalescence than such fluids as gruel, beef-tea, or milk and barley-water. He also thinks that much may be done to prevent the irritating after-pains, by retarding the birth of the child and placenta, an opinion from which we dissent; while it is also difficult to understand his objection to *opium* for the relief of these pains, when he recommends ergot combined with chloric ether, *morphia*, camphor, or henbane.

Respecting the *curative* treatment there are three principal indications to be borne in mind,—viz., the depuration, correction, and reparation of the blood. In carrying out these indications, as far as regards the sthenic or inflammatory type of the disease, Dr. Mackenzie resorts to emetics, efficient purgatives, and diuretics combined with diaphoretics; to the free administration of the alkaline salts, especially those of potash and ammonia, with saline effervescing drinks; and to the employment of nourishing food, iodine of potassium in bark and sarsaparilla, or quinine and the mineral acids. In the asthenic or septic type of phlegmasia dolens, the depurative treatment is to be systematically adopted through the whole active stage of the disease; and for this purpose stimulating emetics and mild mercurial purges are recommended. At the same time that by persistent elimination we seek to rid the blood of the poisonous principles already in circulation, we ought, through corrective treatment, to endeavour to check their further formation. The best agent for this purpose, in Dr. Mackenzie's opinion, is the hydrochloric acid; and he is in the habit of directing one ounce of dilute hydrochloric acid to be taken daily in a quart of barley-water, with about half an ounce of chlorate of potass (to recruit the saline constituents of the blood), and occasionally a little sulphate of magnesia. The sesquicarbonate of ammonia in full doses is often valuable, especially when there is great prostration. On account of the antiseptic powers of creasote, this substance may form the basis of vaginal injections, to be employed daily. The last general indication points to the renovation of the blood; a principle to be effected by nourishing food and stimulants, pure air, and quinine.

With regard to local treatment, it need only be said that leeches and

fomentations are required in the inflammatory form of phlegmasia dolens; liniments of opium, or of veratria and aconite in soap liniment, when the pain is of a diffused or neuralgic character; while in all instances the affected limb should be elevated and flexed inwards, covered with cotton-wool and oil-silk, or fomented with equal parts of hot vinegar and water. Subsequently, to restore power to the limb, daily frictions with camphorated oil will be needed; a flannel bandage ought to be worn; galvanic currents, both continuous and interrupted, may be daily used with advantage; and the patient should take exercise as freely as possible.

The foregoing analysis of Dr. Mackenzie's volume is sufficiently full to render further remarks unnecessary. We cannot close our notice, however, without saying that we regard the work as a valuable contribution to medical literature.

IV.

REPORT ON PHYSIOLOGY.

On the Molecular Theory of Organization. By Dr. J. Hughes Bennett, Professor of the Institutes of Medicine in the University of Edinburgh. ('Proceedings of the Royal Society of Edinburgh,' April 1st, 1861.)

Parodying the celebrated expression of Harvey, viz., *Omne animal ex ovo,* it has been attempted to formularise the law of development by the expression *omnis cellula e cellula,* and to maintain "that we must not transfer the seat of real action to any point beyond the cell." In the attempts which have been made to support this exclusive doctrine, and to give all the tissues and all vital properties a cell origin, the great importance of the molecular element, in Dr. Bennett's opinion, has been strangely overlooked, and the object of the present paper is to show that real action, both physical and vital, may be seated in minute particles, or molecules much smaller than cells, and that we must obtain a knowledge of such action in these molecules if we desire to comprehend the laws of organization. To this end the author directs attention: 1st, To a description of the nature and mode of origin of organic molecules; 2nd, To a demonstration of the proposition that these molecules possess inherent powers or forces, and are present in all those tissues which manifest vital force; and 3rd, To a law which governs the combination, arrangement, and behaviour of these molecules during the development of organised tissue.

On the Structure and Growth of Cells. By Dr. Beale, Professor of Physiology in King's College, London. ('Dublin Med. Press,' September 4th, 1861.)

"I consider," says Dr. Beale, "that the whole process of "cell formation" essentially consists in a continual movement outwards of particles from centres, their place being occupied by nutrient matter which becomes animated when it arrives at the centre. It seems to me that the formed material (*cell wall, intercellular substance*) can never be formed by being deposited around the living germinal

matter; but that it is, so to say, the result of the life of the particles of this substance. The oldest particles of germinal matter being resolved into formed material, which may take the form of *cell wall*, *intercellular substance*, *soft matter like mucus*, or *products* which rapidly become converted into the characteristic *elements* of a *secretion*, according to the inherent powers of the germinal matter from which this formed material was produced, and which powers were derived from pre-existing germinal matter. The facts and arguments in support of this view are numerous, and it has resulted simply from the examination of a great number of structures prepared in precisely the same manner.

"In the 'cell' or elementary part of every living structure particles exist of various ages, and these particles, and the particles of which they are composed, during life never cease to move in one determinate direction which is constant in all living beings, being always *from* the centre of each component particle of the living mass of germinal matter. The rapidity of the movement determines the rate of growth of the structure, and is influenced by the supply of pabulum. It varies much in different structures and in the same structure at different times.

"Perhaps I may make my meaning more intelligible by expressing the opinion that in *nutrition* and the *formation* of *tissue* or *secretions*, these simple changes occur in an elementary part (cell):

"1. The pabulum passes through the formed material into the germinal matter, amongst the particles of which it becomes living.

"2. The particles become animated just before these last move outwards.

"3. The oldest outermost particles become resolved into formed material.

"4. The formed material accumulates, or the oldest outermost part undergoes disintegration and is removed, or by the action of oxygen is converted into soluble substances or gaseous products."

On the Influence of White Light, of the different Coloured Rays and of Darkness, on the Development, Growth, and Nutrition of Animals. By Dr. Horace Dobell. ('Proceedings of the Royal Society,' February 17th, 1859.)

After referring to the experiments of Edwards, Higginbottom, E. Forbes, Morren, Wöhler, Hannon, Moleschott, and Béclard, the results of which were shown to be somewhat contradictory, the author describes the precautions taken by himself to avoid sources of fallacy.

The original experiments detailed in this paper were conducted in the years 1855, 1856, 1857, 1858. The subjects selected were the ova and larvæ of the silkworm (*Bombyx mori*) and of the frog (*Rana temporaria*). A comparative experiment in the vegetable kingdom was also made on the sweet pea (*Lathyrus odoratus*). The apparatus contrived for the experiments on tadpoles secured the following desiderata:

1. That each of six compartments or cells should be supplied

with water from the same source, at the same time, subject to the same changes, and capable of being refreshed without interfering with the cells.

2. That each of the cells should be placed in the same condition with respect to the supply of air and of food.

3. That during exposure for examination of the animals, the whole series should be opened the same length of time and to the same extent.

4. That each cell should receive no light but that transmitted by its proper cover.

One of these six cells was open to the air and to light; one was covered with ordinary white glass; one was made completely dark by a covering of blackened opaque glass; one was covered with blue, one with greenish yellow, and one with red glass. The transmitting and absorbing powers of these glasses were detailed from experiments made upon them by Mr. Cornelius Hanbury, jun., and by the author.

The apparatus used for the silkworms was, in all essential particulars, the same as that for the tadpoles, only without water.

A tabulated analysis of the daily journal kept during the experiments is given, and the following propositions are advanced:

All other conditions being the same, (1.) *The Ova of Insects* are not directly influenced in their development by white light, by the different coloured rays, or by darkness.

(2.) *The Larvæ of Insects* are not directly influenced in their development, growth, nutrition, or metamorphoses by white light, by the different coloured rays, or by darkness.

(3.) *The Larvæ of Batrachian Reptiles* are not directly influenced in their development, growth, nutrition, or metamorphoses by white light, by the different coloured rays, or by darkness.

(4.) *The Materials necessary to the Colour of Insects and Reptiles* are prepared equally under the influence of white light, of the different coloured rays, and of darkness.

In the vegetable kingdom the case is quite different, and the experiments on *Lathyrus odoratus* recorded in this paper demonstrates again, what has been shown by numerous other experimenters, that *light as a direct agent* is essential to the nutritive processes of plants. An interesting exception occurs, however, in the vegetable kingdom, which serves to strengthen the probability that the conclusions arrived at concerning animals are correct, viz., that fungi—which derive their nutriment, like animals, from organic compounds already prepared for them—perform their vital functions without dependence on the influence of light.

Under the head of colour, it would seem that the familiar phenomenon of *etiolation* witnessed in plants which have been deprived of light, has led to erroneous anticipations as to the effect which alterations of light would produce upon the development of the colouring materials in animals.

In the experiments here recorded, it is seen that neither white light, nor the different coloured rays, nor darkness altered the development of those materials necessary to the exhibition of colour, when

the animal was seen in ordinary light. The experiments of Dr. Gladstone, on plants, also show that the development of colouring matter in the petals of flowers is independent of the influence of light; that flowers raised under the different coloured rays and in darkness have the same colour in their petals as when raised in ordinary light. Thus, even in vegetables, *etiolation* is confined to those parts of the plant which depend for their colour upon the condition of the chlorophyl, to the green appearance of which some portion of the solar beam is evidently essential.

The results of these experiments may be found to put a new construction upon the facts observed by Professor Forbes. This naturalist discovered that increased depth of sea corresponds with diminished light, and that both of these conditions again correspond with peculiar changes in colour, and ultimately with loss of colour in the shells inhabiting these depths; but there is no evidence to show that these colourless shells have developed any materials capable of manifesting colour after exposure to the influence of light; whereas many experiments show that the *etiolated* stalks and leaves of plants speedily manifest the characteristic colour of the chlorophyl if placed in the sun's rays.

So far, therefore, as our present knowledge on the subject justifies any conclusion, the varieties of colour and the absence of colour in the mollusks are physiologically separated from the phenomena of etiolation in plants, and may be placed in the same category as the varieties of colour and the absence of colour in the corollas of flowers, which depend upon the development of materials having certain optical properties.

The beautiful facts observed by Professor Forbes, instead of being regarded as the consequence of imperfect exposure to light, must, Dr. Dobell thinks, take rank with the phenomena of coloration observed throughout the animal kingdom, such as the peculiar markings of reptiles, birds, and wild animals, according to their different habitats and modes of life; the colours of the upper and lower surfaces of fish, and the like, which cannot be shown to depend upon the exposure or non-exposure to light with which they frequently, but not always, coincide. These facts appear only to form a part of the vast and perfect plan of creation, in which everything that exists is suited in every particular to the conditions of its existence; thus, those mollusks which are designed to inhabit depths scarcely permeable to light, can have no need, and hence have no provision, for elements, to the manifestation of which light is an essential condition.

The Influence of Water upon the Metamorphosis of Matter. By Dr. Frederick Mosler, of Giessen. ('Med. Times and Gazette,' November 30th, 1861.)

Dr. F. Mosler has recently instituted a series of experiments on the influence of common drinking-water, taken in various quantities, upon the general metamorphosis of matter in the human body, which have led to important results. The experiments were made on a number

of men, women, and children; in one series the food and the general mode of living remained unchanged; in another, the liquids which had been usually taken, were withdrawn; and in a third, various quantities of common drinking-water were added to the usual consumption of liquids. The water used in these experiments had been carefully analysed, and was found to contain 2·7 grains of solid constituents, amongst which the carbonate of lime, iron, and magnesia, and chloride of sodium predominated. One grain of carbonic acid was contained in sixteen ounces of water.

The disturbances observed after withdrawing liquid food were very striking, and ensued more rapidly, if the solid food which was taken contained only a trifling quantity of water; in persons in whom the metamorphosis was comparatively more energetical than in others; if exercise was taken, and if in consequence of previous indisposition, there was no great power of resistance to morbid influences. In every case the secretions and excretions were diminished, especially so, the excretion of urine, which, although its specific gravity was considerably increased, nevertheless was found to contain a much smaller amount of solid constituents than the quantity of urine which had been previously discharged. The urea was very much diminished; after that came the chloride of sodium, phosphoric and sulphuric acid. Effete matter was therefore retained in the blood, in consequence of a diminished action of the kidneys; and to this the morbid symptoms, and especially the fever which was observed, were no doubt to be ascribed. The excretion by the skin and the lungs was also much diminished; costiveness, loss of appetite, and a dry tongue were complained of—that is, evidently symptoms owing to a deficiency in the secretion of the mucous membrane of the mouth, the stomach, and the intestines.

If, on the other hand, a larger quantity than usual of water was administered, the metamorphosis was greatly accelerated. The quantity of the urine, of urea, the sulphates, phosphates and chlorides, and of the fæces, was much augmented, while uric acid appeared diminished. As regards age, sex, and constitution, the same quantity of water had a much more considerable and lasting effect in boys and girls than in adult males; if water was administered for a somewhat lengthened period to males of a feeble constitution, the metamorphosis was in them more increased than in very vigorous persons; and febrile symptoms set in which were, in a few instances, of a threatening character. The temperature of the atmosphere, and of the water which was taken, had also a certain influence. If the air was warm, and at the same time exercise was taken, the metamorphosis increased more considerably; warm water appeared more effective than cold, and there were also differences according to whether the several quantities of water were drunk at long intervals or in rapid succession.

In cases where the increased appetite was indulged by a more abundant administration of food, the waste of the system was thereby compensated, and the long-continued use of water thus made less inroads upon the constitution than was the case if the food was not increased; the weight of the body was also not so much diminished under such circumstances. In some cases the action of the water was

chiefly diuretic, in others it was more diaphoretic. As regards the intestines, generally, only a very trifling quantity of water was eliminated by them; but in one boy and two girls a large amount of water taken caused profuse diarrhœa, which was also observed in a few adult males, after the use of the water had been long continued.

On the Specific Gravity of the Healthy Adult Brain. By Dr. Peacock. ('Proceedings of the Pathological Society of London;' and 'Med. Times and Gaz.,' May 18th, 1861.)

The mode in which Dr. Peacock's observations are conducted, is first to weigh the whole organ and its several parts in air, and then in distilled water, and so to calculate the specific gravity. In these respects these observations differ from those made by others, who had employed solutions of common or Epsom salt of ascertained density, into which portions of brain had been placed. The results arrived at by Dr. Peacock are, that in the healthy adult the mean specific gravity of the cerebrum was 1·03488; cerebellum, 1·04162; pons and medulla, 1·04006; encephalon, 1·03633. In the healthy adult female the specific gravity of the cerebrum was 1·0351; cerebellum, 10·3952; pons and medulla, 1·0406; encephalon, 1·03616. Dr. Peacock also mentions some observations on the specific gravity of the brain in young persons, and in cerebral disease, but they are too few to have any deductions drawn from them.

On the Functions of the Spinal Cord. By M. Chauveau, of Lyons. ('Journal de la Physiologie,' Juillet, 1861.)

M. Chauveau sums up a long memoir with the following conclusions. 1. In the physiological state, in adult mammalia, the spinal cord is not equally capable at all points of being impressed by irritation, in such a manner as to produce phenomena of motion or sensation. 2. The antero-lateral parts are quite unexcitable, whether on the surface or in their deeper structure. 3. The posterior cords are not excitable in their deep layers, but are very excitable at the surface, especially at their external border, towards the line of emergence of the sensitive roots. 4. The excitation of these parts produces exactly the same phenomena as irritation of the sensitive roots—pain, and more or less general reflex convulsions, if the spinal cord communicate with the brain, and reflex convulsions alone if the cord have been separated from the encephalon. 5. These reflex convulsions are the only motor phenomena produced by irritation of the spinal cord. The organ is incapable of directly producing movements, in the same way as the anterior roots of the nerves. 6. When the motor roots of the nerves are irritated, the muscular contraction is always centrifugal—manifested beyond the part acted on; when the spinal cord is irritated, the muscles both above and below the part are thrown into action. 7. It is therefore not correct to recognise in the cord an anterior motor part, conducting from the centre, and a pos-

terior sensitive part, conducting towards the centre. 8. The phenomena of motion and of sensation are both developed by irritating the same part of the cord—the surface of the posterior columns.

An experimental inquiry into the Action of Alcohol on the Nervous System. By Dr. MARCET, Assistant-Physician to the Westminster Hospital, &c. (London: Pamphlet, 1860, pp. 20.)

The experiments recorded in this essay are numerous and conclusive. The principal results arising from them are:

1st. That alcohol acts *principally*, though not *exclusively*, on the nervous centres by means of absorption, and consequently through the circulation.

2nd. That alcohol exerts a *slight* but *decided* action on the nervous centres through the nerves, independently of the circulation.

3rd. That the action transmitted through the nerves may be of two kinds:

(*a*). It may give rise to a shock, or temporary complete suspension of sensibility and mobility (with the exception, perhaps, of that of the eyelids), although respiration continues.

(*b*). It may produce no other visible effect than hastening death.

On the Tactile Sensibility of the Hand. By Dr. EDWARD BALLARD. ('Proceedings of the Royal Medical and Chirurgical Society,' March 11th, 1862.)

The method employed in these investigations is that of Weber; but inasmuch as the results of this method vary according as the points of the compasses are laid in the direction of the long axis of a part or transversely to it, Dr. Ballard employs the sum of the numbers obtained by an observation in each direction as representing the true sensibility of any part. The numbers are given in English inches and decimals. The hand, being *par excellence* the organ of touch, and possessing on the whole the highest amount of sensibility, and giving thus readily a standard for comparison of subjective impressions made elsewhere, it is important that it should be the organ first examined. The paper is based upon the results of observations made upon 142 points upon the surfaces and borders of the author's own hand and fingers—in all, therefore, of 284 separate observations. It consists mainly of elaborate tables, from which the author deduces in due order the general sensibility of the hand and its surfaces and borders; and, separately, of the metacarpal portion, fingers and thumb. He not only compares these several parts between themselves, but points out the relative sensibility of the lateral halves of the hand, these being related to the freer motion imparted to the radial half; and of the centre to the sides, as showing at what parts of the hand the sensibility is highest at any given distance from the wrist. The following are some of the more important deductions.

The most sensitive spot of all he finds to be the tip of the index finger, in which he differs from Weber, but agrees with Valentin. The sensibility of this spot is represented by the number ·35 in. The spot where he found the lowest sensibility (5·0 in.) was on the dorsum of the hand, opposite the base of the fifth metacarpal bone. The palmar surface of the hand was in all parts more sensitive than the dorsum; but this was not the most sensitive part, for next to the tips of the fingers stood in order the two borders, the radial border being more sensitive than the ulnar. As pointed out by Weber, he also found that the sensibility of the hand increases from the base towards the extremity; but the author exhibits this fact by accurate numbers, and demonstrates not only the increase but also the rate of increase on each surface and border of the hand and of each finger separately. He finds the most rapid increase in sensibility to take place at the spot where the fingers actually commence, not where they apparently commence, and thus not at the clefts, but opposite the metacarpo-phalangeal articulations, and again at the middle of the last phalanges on approaching the tips of the fingers. Perhaps the most interesting and important demonstration of all is that which relates to the fingers and their several surfaces. On the whole, the most sensitive finger is the index, and the sensitiveness shades off towards the ulnar side of the hand; and the most sensitive portion of the index, next to the tip, he finds to be its radial side. Of the little finger, the most sensitive part is the ulnar side, and he connects these two facts with those parts entering into the constitution of the borders of the hand at large. Of the palmar surfaces of the fingers, that of the index is the most sensitive; of the dorsal surfaces, that of the ring finger is the least sensitive. As respects the radial sides of the fingers, he finds the radial side of the index to be the most sensitive, and that the sensibility shades off as the fingers are further removed from the radial side of the hand, till it becomes least upon the little finger. As respects the ulnar sides, he finds that of the little finger is the most sensitive, and that the sensibility becomes less as the ulnar side of the hand is distanced; with this remarkable exception, however, that the high sensibility of the index is provided for by its ulnar side standing next in rank to that of the little finger. Of the three intervals between the fingers, that whose approximating surfaces possess the highest sensibility is the interval between the index and middle fingers. The thumb is, for the sake of convenience and simplicity, considered separately,—and is regarded, from its carpal attachment onwards, as a finger not having a metacarpal element. It is thus compared in the paper with the fingers, from their metacarpo-phalangeal joints onwards. Appended to the paper are tables exhibiting the observed sensibility in each direction at the several spots examined, and four photographs on which are marked the sums of the observations at each spot. The author reserves the consideration of the differences of result according to the direction in which the compasses are placed for a future communication.

On the Action of Heat on the Muscles. By M. KHUNE. ('Gaz. Méd. de Paris,' December 28th, 1861; and 'Dublin Hosp. Gaz.,' March 1st, 1862.)

When a warm-blooded animal is placed in a stove at a higher temperature than that of its body, the animal dies suddenly after a longer or shorter interval (varying with the heat of the stove), when its blood has become heated to 7° to 9° Fahr. above its natural temperature; *i.e.*, to about 113° Fahr. in mammalia, and 119° in birds. Moreover, when animals die under these conditions, muscular rigidity sets in with death. As the results of numerous experiments, M. Khune has been led to the conclusion that there exists in muscles a substance capable of being precipitated by heat, and which coagulates, producing muscular rigidity, at precisely the same temperature at which the animals die—95° Fahr. in frogs, 113° Fahr. in mammalia, 119° Fahr. in birds. Hence, in these cases, death is the simple result of the physical action of heat on this coagulable material in the muscles, which, as is seen, is even more liable to be acted on by heat than the albuminous constituents of the blood. And that the death is to be referred to the cause pointed out, seems confirmed by the fact that this material presents in reptiles, mammalia, and birds, differences in the temperature required for its congulation precisely corresponding with the differences in the degrees of heat which destroy the animals.

The Influence of the Nervous System on the Chemical Composition of the Blood. By M. CLAUDE BERNARD, Professor of General Physiology at the College de France, Paris. ('Med. Times and Gaz.,' July 13th, 1862.)

In our experiments on the urinary secretion, we were struck with the singular appearance of the blood which flows in the renal veins; its colour is usually of a bright red, like that of arterial blood, although at intervals it resumes a darker hue. The fact is easily ascertained most animals, particularly in the rabbit, the vascular parietes being in this animal exceedingly thin and transparent. On further examination these phenomena were found to be connected with the process of secretion as carried on in the kidneys; the ruddy arterial colour of the blood contained in the veins corresponding to a period of activity in the gland, and its darker hue to a period of rest. We were then led to examine the state of the blood in other secreting organs. The submaxillary gland, in the canine species, being large and superficial, was selected for this purpose, and we ascertained that the venous blood in this gland is usually of a dark purple colour, but grows scarlet as soon as the process of secretion commences, a result easily obtained by galvanising the tympanic nerve, or pouring a few drops of vinegar upon the animal's tongue. We thence inferred that if the venous blood is usually red in the kidneys, this result arises from the almost incessant activity of the urinary secretion; while in the sub-

maxillary gland, the functions of which are intermittent, the ordinary colour of the blood is similar to that observed in other parts of the venous system.

"The analysis of the gases contained in this fluid fully corroborates the foregoing conclusions. The bright ruddy colour of venous blood coincides with the presence of an unusual proportion of oxygen; while in its ordinary state, it contains a much larger quantity of carbonic acid gas. It is therefore evident that during the process of secretion the fluid which circulates in the veins retains the chief characteristics of arterial blood, and that nervous influence, acting, as it does, upon the glands, is capable of accelerating or retarding the absorption of oxygen in the very depth of our tissues. In the muscular system the effects are reversed; when the muscles enter into contraction, the venous blood grows quite black, and scarcely contains a trace of oxygen; when, on the contrary, the muscles are at rest, it slightly resembles arterial blood.

"The great distinction drawn by Bichat between the two different conditions of this fluid, before and after its passage through the lungs, is not, therefore, strictly in accordance with facts, for the physiological state of the tissues, through which it circulates, exerts, as you see, a powerful influence on its chemical composition; if venous blood is usually of a dark purple colour, if it contains little oxygen, and a large proportion of carbonic acid, it derives these properties from the incessant activity of the muscular system, which, in the living animal, is never at rest, since even during sleep, the head and respiratory muscles are constantly in motion; patients in a state of syncope alone form an exception to this rule, and Hunter remarks that when the blood is drawn from the veins under such circumstances, it is invariably of a bright red colour.

"All these phenomena, in our opinion, are satisfactorily accounted for by the opposite action of the two classes of vasomotor nerves,—those which dilate, and those which contract the vessels; let us consider the effects of their antagonism upon the respiratory functions.

"It was formerly believed that the oxygen introduced into the lungs was then and there chemically combined to the elements of the blood, creating in this manner a sort of combustion within the air-cells, from which the carbonic acid exhaled, and the animal heat produced during the process of respiration, were both derived. But the operation is a more complicated one than our predecessors had supposed; and we are now aware that the combination of oxygen with the cast-off materials of the economy takes place, not within the lungs, but in the very depth of the tissues themselves, and that as long as this gas remains in the blood, the respiratory process is not accomplished. Viewed in this light, the function is one of those which immediately obey the influence of the nervous system, as we shall now proceed to show.

"If we divide the sympathetic nerve in any given region of the body, we set at liberty the system which opposes its action: the vessels are then dilated, and the blood passes from the arteries into the veins without undergoing any material change; and, when drawn from the jugular, it is almost as ruddy as that which escapes from a wound

inflicted on the carotid. The active state of glands, and the passive condition of the muscular apparatus, are equally favorable to this peculiar appearance of blood in the veins; and however different these various causes, all tending to the same result, may at first sight seem to be, they coincide in one most important particular—the acceleration of the passage of this fluid through the capillary network which lies between the two great vascular systems; in fact, we know these delicate vessels to be the principal seat of nature's chemistry: in this point do the elements of the blood come into close contact with the materials which compose our tissues and enter into combination with them; in the capillaries do all these intimate operations take place, and the heat which arises from the chemical phenomena of life is generated there. Oxygen is conveyed into the tissue of the blood-corpuscles, and after reaching its destination is converted into carbonic acid, or other compounds. But the chemical affinities to which all these transformations are due cannot be called into full play, unless the blood stagnates for a certain lapse of time in the smaller capillaries; time is one of the most indispensable conditions for the production of similar changes. If, therefore, it is intended to propel the blood from the arterial into the venous system without altering its properties, without depriving it of the oxygen which it contains, to accelerate its passage is the safest method of obtaining this result; if on the contrary, it is desired to create in this respect as wide a difference as possible between the two orders of vessels, the circulation must be retarded; now these opposite effects are produced, as you are well aware, by galvanizing or dividing the sympathetic nerve.

"When it is intended to secure venous or arterial blood, under these various circumstances, for the purpose of chemical analysis, we believe the following method will be found the most available:—The principal artery and vein of a muscle being laid bare, contractions are excited by means of a galvanic pile, and the blood is drawn with a fine syringe from the vessels in which it is contained; for the contact of atmospheric air would partially oxygenate this fluid, and vitiate the results of the experiment. We generally select for this purpose the rectus femoris, which in most animals, and particularly in the canine tribe, is readily separated from the adjoining muscles.

"When all the proper precautions have been taken, the observer is enabled, in this manner, to ascertain:—

"1st. That when a muscle contracts, the venous blood contains less oxygen, and more carbonic acid, than in a state of rest.

"2nd. That, on comparing arterial and venous blood, the quantity of carbonic acid which the latter contains is not found sufficient to account for the total amount of oxygen which has disappeared; it would therefore appear that the transformation is not directly effected, but that various intermediate compounds are produced.

"3rd. That the solid residue which remains after evaporation is larger in blood drawn from a muscle in full activity than in the fluid obtained from a muscle at rest.

"It is hardly necessary to say that inverse results are obtained in operating on the glands; we know, in fact, that their period of activity coincides with the ruddy colour and arterial state of the *venous blood.*"

On the process of Oxygenation in Animal Bodies. By Dr. B. W. Richardson. ('Proc. of Brit. Assoc. for the Adv. of Science,' April, 1860; and 'Brit. Med. Journ,' July 14th, 1860.)

So soon as the discovery of oxygen by Priestley became an established fact in the world of science, inquiries were set on foot as to the influence of this substance on animal bodies. The term by which it was long known, "vital air," indicates sufficiently the interest that was attached to it in a physiological point of view. Priestley himself made various physiological experiments with oxygen, in which line of research he was followed by Lavoisier, Beddoes, Sir Humphry Davy, Hill, and several other celebrities of the declining eighteenth, and rising nineteenth century. From the researches of various experimentalists, it had been concluded that the inhalation of oxygen in the pure state, by giving rise to a greater absorption of the gas, sets up an increased oxygenation in the body—hypercausis, and inflammatory conditions, general and local. This view, first promulgated by Dr. Beddoes, and followed up by many contemporary writers, was probably the basis of the chemical nomenclature of disease invented by Baumé, in which disorders were divided into those of oxygenation, of calorification, hydrogenisation, azotifaction, and phosphorisation, with remedies of the same names for their treatment.

A second conclusion as to the influence of oxygen on animals, intimated (also from experiment) that oxygen, when inhaled in the pure form, is even less active than as it exists diluted in common air; that, instead of increasing the combustion of the body and its activity, it lessens these; and that animals exposed to it too long die from coma attended with a steady and undiminishing exhaustion. The idea that oxygen is absorbed when the gas is breathed in the undiluted state was supported by Davy: the statement that the gas destroys by narcotic exhaustion was doubtfully suggested by Priestley, and openly by Broughton. For years this view of the question has been the one most commonly taught in this country.

The last conclusion that had been drawn from experiment relative to the effects of oxygen was, that it has no influence on life. Lavoisier, in his later experiments, seems to have drawn this inference, and Regnault has greatly confirmed it.

In 1852, with these conflicting data before him—those of Regnault only excepted—Dr. Richardson conmenced an inquiry into the whole subject, which he has continued, with intermissions, to the present time. The author here narrates his earlier experiments, from which he came to the conclusion that animals of active respiration, as dogs, cats, and pigeons, on being subjected to a constant stream of freshly made oxygen, become subject to inflammation, owing to the rapid destruction of the tissues—hypercausis. In further experiments, he finds, however, that this rule is not common to all animals; for rabbits and frogs were kept by him even for weeks in oxygen without apparent injury. On these data, therefore, he gives the following as the first major proposition of his paper:

The influence of pure oxygen, as an excitant, differs according to

the animal; being most marked in animals of quick respiration and high temperature; and least marked or *nil* in those of feeble respiration and lower temperature.

Up to 1856, the author had felt assured that oxygen, when it destroys life in the actively breathing animals, does so by causing a too rapid oxidation of tissue and the so-called inflammatory process; and he believed that the symptoms of narcotism and paralysis, named by Broughton, were due, without doubt, to one or other of two possible errors, introduction of carbonic acid, or modifications of the air-pressure exerted on the animal. In 1857, he began to suspect that his view was not strictly correct; but he had no proof either one way or the other until the present year, when a new observation opened a new phase of the question. Having made on one occasion forty gallons of oxygen, and having, by the side of the reservoir containing the oxygen, another reservoir of equal size filled with water, Dr. Richardson determined, in order to economise both labour and material, to collect the oxygen from the supplying reservoir, after it had passed through the chambers containing the animals. He arranged also to wash the oxygen in alkaline solution until it was free of carbonic acid altogether; to pass it over sulphuric acid to remove any ammonia; and finally to charge the second reservoir with it and to use it again, sending it thus backwards and forwards from one reservoir to the other until it was all used.

When the apparatus was complete, he placed four warm-blooded animals, a cat, a dog, a pigeon, and a rabbit, with two frogs, in a large chamber; and, at 11 o'clock in the morning, commenced the transference of the oxygen, passing it through the chambers at the rate of 2000 cubic inches per hour. In six hours, the whole of the primitive oxygen, *minus* nearly 1000 cubic inches which had been lost in respiration, was transferred into the second reservoir. The gas was now tested, and, having been found to give no reaction to lime water, it was driven back through the chamber and washed again thoroughly with potash, to be received once more into the reservoir number one. As the first charge of oxygen was passing through the chamber, there were exhibited no signs different from those of excitement, which had before been seen; but, as the second charge passed through, all the animals became depressed and drowsy. After an interval or four hours, the current was again changed, and the oxygen, purified most carefully of extraneous matter, was a third time given to the animals. It now became more obvious that every animal was under some peculiar depressing influence; even the rabbit did not escape. The symptoms were entirely different from those arising from carbonic acid. The breathing was quick, but easy and tranquil. There was not the slightest approach to convulsion. The pigeon buried its head under its wings, and simply drooped and slept. The four-footed animals sat with their fore legs straight and their heads between them, nodding as if in profound and pleasant sleep; they were aroused with difficulty, and fell off again in an instant. Then the fore legs slowly gave way forwards as if paralysed; and, before the third charge of the oxygen was three parts over, the pigeon was dead, and the kitten was so nearly dead that it was not easy to detect its chest movements:

the dog gave no sign of sensibility, but breathed softly; the rabbit was fast asleep. The frogs alone were unaffected.

At this crisis, a little air was pumped out of the chamber through lime-water; it gave less indication of carbonic acid than the common air which the experimentalist was breathing. The animals were then removed and a lighted taper was placed in the chamber. The taper burned with more brilliancy than in the air, but with a slight yellowness of flame.

The animals were all nearly dead. The kitten died a few minutes after removal; the rabbit recovered in two hours; the dog seemed paralysed in the limbs for the greater part of the day, but recovered. When the bodies of the pigeon and kitten were opened, there was found no indication of asphyxia. The lungs were inflated and red; the heart contained blood on both sides, but the blood in each side was of the same hue, neither being very dark; the brain was bloodless; the organs were natural. The appearances in the pigeon corresponded with these with the most minute accuracy.

Dr. Richardson next narrates the histories of several other experiments, from which he derives the following and the second major proposition:

Oxygen, when breathed over and over again, although freed entirely from carbonic acid or other known products of respiration, loses its power of supporting life; the process of life ceasing, not from the introduction of a poison, but by a negation or a withdrawal of some principle extant in the primitive oxygen, which is essential to life.

The last section of the paper has reference to the influence of oxygen on muscular irritability; and various experiments are again given. On them the author founds the third major proposition:

Oxygen, while it is essential to muscular irritability and muscular power, exerts its influence over muscle, not as a direct excitant of muscular contraction, but by supplying to the muscle an agent or force by which the muscle is fitted for contraction on the application of an exciting cause.

On the Sounds caused by the Circulation of the Blood. By Dr. LEARED, Physician to the Great Northern Hospital, &c. (8vo, Pamphlet, Churchill, 1861, pp. 22.)

In this thesis Dr. Leared maintains that vibration of valves or other structures, when in contact with blood, has no more to do with the sounds in question, than the vibration of a door with the sound produced by the passage of wind through its keyhole; the sounds in the one case being due to rapid motion in the air itself, and in the other to rapid motion in the blood itself. In order to show that sounds may be formed by the motions of fluids only, and that the quality of a sound is much influenced by the motion of the fluid, Dr. Leared appeals to certain experiments. In one of these "a horizontal reservoir, one foot and a half long, eight inches wide, and as many

deep, the end of which was perforated at its centre by a brass tube, was provided. This tube had an internal diameter of half an inch; one of its extremities projected two inches into the reservoir, while to the shorter external part of the tube an india-rubber bottle was adapted. When the reservoir was filled with water, a column of it could be forcibly projected in an intermittent manner into a body of water in a state of rest, by alternately compressing and relaxing the india-rubber bottle grasped in the hand. If during these actions the end of a solid stethoscope was introduced beneath the water close to the point where the jet issued from the tube, but so as to avoid the current, a blowing sound was heard through the stethoscope, loud or weak in proportion to the force employed in compressing the bottle. The blowing sound, *bruit de soufflet*, might also be heard in all parts of the reservoir. If the stethoscope was so held that the jet of water impinged upon it, a louder sound, but still a distinct *bruit de soufflet*, was produced.

"In this experiment the stationary water was forcibly penetrated by the moving column, while, owing to the mobility of the fluid, sufficient friction occurred between its particles to give rise to low-pitched sounds—murmurs. The size of the reservoir precluded the possibility of friction of the water against its sides being concerned in causing sound.

"In order to test the effect of viscidity of the fluid upon sound so produced, the experiment was modified as follows:—The apparatus having been filled with glycerine instead of water, the same motions were performed. The first thing obvious on listening with the stethoscope was the comparative difficulty of producing sound. But when the india-rubber bottle was compressed very strongly, a faint sound, resembling the first sound of the heart, was heard near the mouth of the tube. When, however, the moving column was allowed to strike the stethoscope, a loud sound, exactly resembling the heart's first sound—and, therefore, presenting a striking contrast with the sound produced by water under similar circumstances—was heard.

"In this experiment, the divisibility as well as the mobility of the fluid was greatly diminished by its increased viscidity and specific gravity. The impact between the fluid forcibly expelled from the tube and the fluid in the reservoir was therefore more complete than in the case when water was employed. Hence a sufficient concussion occurred between the opposing particles to give rise to a sound of a very different character from that formed by friction between the particles of water.

"It was perfectly obvious, in both experiments, that the sounds were formed in the fluid external to the tube; in the case of the water, because the murmur, although heard from transmission when the stethoscope was applied to the tube, was much louder beyond it, and because it will be afterwards shown that water, moving under pressure in a tube in which there is no obstruction, does not give rise to murmur; in the case of the glycerine, because no sound whatever could be heard in the tube, although a sound was heard external to it.

"Even when the jet was allowed to impinge against the stethoscope,

the results clearly showed the very different action of water and glycerine. In both cases there was increased loudness, but the characteristic sound was in each case preserved."

Dr. Leared also appeals to other experiments in order to show that pressure is a condition of material influence, whether as regards the production of sounds in rigid tubes or in living vessels, and that current sounds are never produced in a tube if the fluid move through it under sufficient pressure. For the application of these and other experimental data we must refer to the pamphlet itself.

On the condition of the Cerebral Circulation in Asphyxia. By Dr. Ackermann, of Rostock. ('Archiv f. Path. Anat., t. xv, 1861, and 'British Med. Journal,' April 27th, 1861.)

Professor Ackermann has lately arrived at some remarkable results from experiments made with the object of ascertaining the condition of the cerebral circulation in asphyxia. These experiments consisted in removing a portion of the skull of an animal, by means of a small trephine, and substituting a piece of glass. After an interval of about twenty-four hours, asphyxia was induced by strangulation, by submersion, by compression of the thorax, by injection of water into the trachea, or by some other plan. The condition of the brain was then watched through the glass plate.

The result of these experiments is, that asphyxia was invariably found to be accompanied by a condition of anæmia, instead of congestion, as is generally believed to be the case. The anæmia was always greatest when the animal was asphyxiated in such a position that its head was higher than the trunk, and least when the animal was suspended by its lower extremities. In the former case, it was as pronounced as that which is observed when an animal has bled to death from the carotids. The congestion of the cerebral vessels, which is not unfrequently met with after death from asphyxia, Prof. Ackermann believes to be attributable to hypostatic hyperæmia of a post-mortem character, favoured by the fluid condition of the blood, which is usually observed in asphyxia.

Experimental Researches on points connected with the Action of the Heart, and with Respiration. By Dr. Austin Flint, Jun., Professor of Physiology in the Bellevue Medical College, New York. ('Amer. Quart. J. of Med. Science,' Oct., 1861.)

In this essay Dr. Flint believes that he has established certain facts, which are not generally admitted or understood by physiologists, and chiefly these:

1st. That the heart elongates during the systole of its ventricles.

2nd. That the cause of the rhythmical contraction of the muscular fibres of the heart is resident in the fibres themselves, is one of their inherent properties, and remains so long as they retain their "irrita-

bility." That it is derived neither from the cerebro-spinal nor sympathetic system of nerves.

3rd. That the natural stimulus which excites the regular and effectual movements of the heart is the blood, and that this cannot be replaced by a fluid of less density.

4th. That though the flow of blood in the cavities of the heart is sufficient to induce, under ordinary circumstances, regular contractions of the organ, still it is necessary that these movements be further regulated and controlled; and that this is effected through the agency of the pneumogastric nerves.

5th. That the action of the heart may be arrested, through the motor filaments of the pneumogastric nerves, by means of galvanism; that this does not take place in animals poisoned by woorara, on account of the paralysis of the motor nerves. That the motor filaments of the pneumogastrics are the last which are affected by this agent, and that in the alligator they are left almost intact. That the cause of the arrest of the heart by galvanization of the pneumogastrics is the exaggeration of the force which regulates the action of the heart, rendering it slower and more powerful.

6th. That in asphyxia, the cause of the arrest of the action of the heart is over-distension of its cavities; and that anything which brings about a sufficient amount of distension will equally arrest the action of this organ.

7th. That the auriculo-ventricular valves are closed by a backward pressure operating during the contraction of the ventricles, and not by the current of blood from the auricles to the ventricles.

8th. That the excitation which gives rise to the reflex phenomena of respiration is received from the general system, and not from the lungs or heart. That this excitation is due to the want of oxygen in the tissues, and not to stimulating properties in the venous blood. That the exaggeration of this excitation constitutes the sense of suffocation, and gives rise, if excessive, to general convulsions.

On the Influence of Lactic Acid upon the Pericardium and in the production of Rheumatism. By Professor VIRCHOW. ('British and Foreign Med.-Chir. Rev.' Jan., 1862.)

Virchow notices the experiments of Dr. Richardson, in which he seeks to prove directly what Prout had originally supposed, which Williams and Todd had also conjectured—that the accumulation of lactic acid in the body was the cause of rheumatism. He also alludes to the observations of Schœnlein, of Joseph Meyer, and of an anonymous writer, "A. W.," on the same subject. He remarks that none of the German observers, in their experiments, had found that rheumatoid affections of the limbs had been produced, and Virchow suggests that possibly in certain cases in which it was supposed that such had been artificially produced, the appearances were the result of injury to the joints occasioned in the necessary operation of *binding* the animal's limbs.

It was, however, quite different with regard to the influence of lactic acid upon the endocardium. On this point the observations of Richardson had been abundantly confirmed by late experimenters. In eight cases in which Rauch had injected lactic acid into the jugular and abdominal veins, changes in the endocardium, and gelatinous thickening of the valves, were produced; and even eight hours after injection into the jugular veins these effects were found. Rauch, who had minutely examined the thickened and swollen granular parts of the valves, takes exception to the statement of Richardson, that it was the result of an exudation. He found, as Virchow had often previously found in the human subject, that it consisted of a soft mucus-like tissue, with an increase and growth of the connective-tissue-corpuscles, which at a latter period undergo fatty changes, and that an epithelium existed. He concluded that the influence of the lactic acid was exercised not upon the free surface, and this especially as the right side of the heart was not much affected.

Dr. Möller looks upon the swelling and redness found at the edges of the valves as a post-mortem phenomenon, and says they do not occur in animals examined directly after death. Both Rauch and Möller found in some cases a want of rhythm in the heart's movements and systolic bruits. Möller considered the murmur to be anæmic, whilst Rauch attributed them to an affection of the valves.

Dr. G. Reyher, encouraged by Virchow, was led to undertake a series of examinations of the hearts of dogs which were killed without having had lactic acid injected into them. These dogs were of every age up to nineteen years old, were killed in the speediest possible way by prussic acid, or the blowing of air into the jugular veins, and their hearts were examined as quickly as could be. On opening the very first heart of an apparently healthy dog, the author found that the very same anatomical changes in the heart's valves existed as Rauch and Richardson found after their injection of lactic acid. Thirty-two dogs were sacrificed in all, and similar changes, in a greater or less degree, and evidently of various dates, were universally found, except in fœtal hearts. Moreover, in one dog, in which the writer had during life injected a solution of lactic acid (according in Richardson's directions) into the peritoneal cavity, and which died twenty hours after, on examination after death the results of a *chronic* endocarditis were found, but nothing like the remains of any acute endocarditis. The various conditions of the valves and their appendages, as displayed after death in these dogs, are minutely given, and their development, as it were, traced from the simplest up to the most decided form of alteration. Moreover, the microscopical characters of the altered valves and new formations are elaborately given in detail, sections as well of the fresh structures as of prepared parts having been carefully examined. For these general and minute descriptions we have not room in this place. In conclusion, from the observations of the author, the following are interesting:

1. That dogs, and probably also many other mammalia, are not so free from pathological changes in the heart as is supposed, and consequently that great caution is necessary in drawing inferences from such experiments upon these animals. (Dr. Albaum also found in the

hearts of young horses, cats, and rabbits, similar changes to those found by the author in the dog.)

2. That in all the thirty-two apparently healthy dogs whose hearts were examined, the changes observed were "identical" with those described by Richardson and Rauch as the result of lactic-acid injection, and called by the latter "parenchymatous endocarditis."

3. As Richardson and Rauch have not sufficiently avoided sources of error (owing to neglect of the examination of healthy dogs), their investigations are of no value in support of the supposed origin of endocarditis from the injection of lactic acid into the peritoneal cavity or jugular veins.

4. Consequently, that endocarditis arises from an accumulation of lactic acid in the blood remains *un*-proven.

Researches on the diffusion of Organic Matter. By Dr. Botkin, of Moscow. ('Edin. Med. Journ.' Nov., 1861.)

The first of Botkin's inquiries relate to the properties of the blood-corpuscles as regards diffusion, without the organism. If defibrinated blood has added to it concentrated solutions of sugar, or chloride of sodium, the colour, from a dark-red, becomes of a bright-red hue; the former, however, returns in course of time. If distilled water is subsequently added, the bright-red colour returns. The changes of colour depend on changes of form in the blood-corpuscles. The effect of adding to blood a concentrated solution is, that a powerful exosmotic current takes place; the corpuscles become more convex, and reflect light more strongly. But as the exosmotic current continues, the cells become contracted, so that their contents almost disappear, and the form assumed is that of elongated or roundish points. The light-refracting properties are lost, and with them the bright-red colour of the blood. If water be added, and the fluid examined with the microscope, it is found that the blood-corpuscles have disappeared, and if any remain they are diminished in size and roundish. In this instance the clear colour (on the addition of water) is due to the entire disappearance of the blood-discs. It appears that blood-corpuscles which have permitted strong exosmotic action are no longer capable of endosmosis. If blood is dried and water added to it, the blood-discs are all destroyed; but if strong syrup is used, distinct red corpuscles are seen. In this way Botkin has detected distinct blood-discs in stains on linen, which have existed three, four, and even six months. The same peculiarity as regards exosmosis holds in the case of other cell elements — cylinder-epithelium, pus, spermatozoa, &c. With solutions of different salts, and with different degrees of concentration, the forms of the blood-cells are varied. With a saturated solution of tartrate of soda, three forms may be distinguished:—1. Cells which are moderately contracted, and with crenated contours. 2. Cells contracted lengthwise, and which often have processes at both ends. 3. Unchanged corpuscles. This difference in form is not accidental, but depends on the intensity and velocity of the endosmotic current, which is regulated by the chemico-physical condition of the blood-

corpuscles. It must be remembered, that in one specimen of blood there are red corpuscles which have different physico-chemical characters. All the cells are not made at the same moment; some have traversed the body once, others several times. A corpuscle which has gone from the liver or spleen to the right side of the heart may not have quite the same chemico-physical constitution as one which has come from a vessel of the brain or the skin.

Botkin observed that blood-corpuscles, after remaining some days in a concentrated medium, almost regain their original size and form. This peculiarity is common to other cell elements—epithelium, spermatozoa, &c. The hæmatin of red corpuscles does not always accompany the exosmotic current, but its behaviour depends upon the nature of the concentrated solution employed. Chloride of sodium and sulphate of soda extract hæmatin, but solutions of sugar or sulphate of magnesia do not. A concentrated solution of urea dissolves the blood-corpuscles, and sets free the hæmatin.

Having ascertained that hæmatin is disposed to diffuse itself in some solutions, whilst it does not in others, Botkin examined in the same respect the behaviour of bile-pigment, and found that, as regards diffusion, it resembles the hæmatin. He thinks that the fact of the bile not mixing with the blood in the liver, is in a measure due to the sugar contained in the latter, and that certain cases of icterus, in which no mechanical cause for the retention and absorption of bile could be found, may be explained by supposing an alteration in the relations of the diffusible properties of the fluids. Some ingenious experiments with albumen prove that that substance is capable of endosmosis when it is subjected to a certain pressure, or when it is changed by putrefaction.

On the difference of the Trigeminal and Sympathetic Saliva of the Submaxillary Gland of the Dog. By Dr. Eckhard, of Giessen. (Eckhard's 'Beiträge z. Anat. und Phys.,' & 'Edin. Med. Journ.,' Aug., 1861.)

It had been observed by Eckard, Adrian, and Bernard, that saliva obtained by irritation of the two nerves supplying the submaxillary gland (the sympathetic and the trigeminal), presented in each case certain differences of properties. The author has made this a subject of careful investigation, and he finds that the differences could even be recognised by the microscope. In trigeminal saliva, Eckhard observed corpuscles of 0·0015—0·0030 mm. in diameter, strongly refracting the light; further, very numerous granules of extreme minuteness, and here and there a few epithelial cells. In sympathetic saliva were extremely few of the light-refracting bodies, so few as to render it probable, in Eckhard's opinion, that their presence was due to a mixture of the two kinds of saliva in the gland; further, the sympathetic saliva contains irregularly formed yellowish-white bodies of various sizes (from 0·015 to 0·040 mm.) which constitute about a third of the whole bulk of the purest sympathetic saliva. Neither of these

varieties of saliva possesses in itself the power of converting starch into sugar. In experiments on the saliva of three different dogs, it was found that the sympathetic variety was of greater specific gravity, and contained a correspondingly greater amount of solid elements than the trigeminal saliva; the specific gravity of sympathetic saliva being 1·0156, and the amount of solid elements 2·7—that of trigeminal variety, 1·0046, solid elements, 1·3.

Contribution to our Knowledge of Digestion. By Dr. HARLEY, Professor of Practical Physiology in University College, London. ('British and For. Med.-Chir. Rev.,' Jan., 1861.)

Dr. Harley arranges his subject under three heads:—1. Buccal digestion; 2, Stomachal digestion; and 3, Duodenal digestion.

1. *Buccal digestion.*—Harley experimented on his own saliva, which was collected between meals, and was of course mixed. The specific gravity varied between 1003·9 and 1005·0 (Longet and Bernard give the specific gravity of the human saliva at 1004 to 1008). He found it to contain a peculiar animal ferment, ptyalin (Berzelius), albumen (Brande), and casein (Simon). A quantitative analysis of 100 parts gave the following:

Water		99·331
Solids		0·669
Ferment, Albumen, Casein, Mucus and epithelium	Organic matter	0·391
Chloride of sodium, Sulphate of potash, Sulphocyanide of potassium, Phosphate of lime, „ magnesia, Iron	Inorganic matter	0·278
		100·000

Dr. Harley tested for iron in the saliva of four healthy individuals, and always found it. He denies the truth of Bernard's statement, that the presence of sulphocyanide of potassium is due to decayed teeth producing decomposition of the saliva, and has found it in persons who had not a single bad tooth. He finds that one part of freshly secreted saliva converted a saturated solution of boiled starch into grape sugar, at a temperature of 38° cent., in 100 seconds. Its action on raw starchy matters is very slow and imperfect. Saliva, by virtue of its alkaline action, possesses to a limited extent the power of emulsionizing fats (Longet). When acidulated and kept in contact with boiled white-of-egg during forty-eight hours, at a temperature of 38° cent., it transforms part of the albumen into peptone. The quantity of saliva secreted in twenty-four hours by an adult is probably from one to two pounds. He finds that iodide of potassium is as quickly excreted by the kidneys as by the salivary glands.

2. *Stomachal digestion.*—A gastric fistula was made in a dog. During fasting the fluid in the dog's stomach was slightly alkaline; but when the animal was prevented swallowing his saliva, it was invariably neutral.

An analysis of 100 parts of gastric juice gave—

Water		97·288
Solids		2·712
Organic matter, chiefly pepsin	2·247	
Chloride of sodium „ potassium Phosphate of lime „ magnesia Iron	Inorganic matter 0·465	
		100·000

Gastric juice does not change starch into sugar, but it does not prevent the action of the saliva in the stomach. It transforms cane into grape sugar. It has no effect on sugar of milk or grape sugar. Fats are liquefied in the stomach partly by the cell-walls being dissolved, and partly by the high temperature of the organ. Neutral fats are changed into fatty acids (Marcet). Albumen is changed into peptone, which has the property of preventing the sulphate of copper and potash test from indicating the presence of sugar, while at the same time it gives to the solution a fine violet colour (Longet); gelatine acts in the same way (Bernard); and the author has found that several other substances have this property of masking the presence of sugar, —among these, casein, meta-albumen, and, to a certain extent, protein substances undergoing putrefaction. The daily secretion of gastric juice the author estimates as a one fifteenth of the weight of the whole body. In reply to the question, Why is the stomach itself not digested? Harley does not agree with Bernard in believing that its preservation from the action of the gastric juice is due to the layer of epithelial cells, but he ascribes it to the layer of mucus which lines its cavity.

3. *Duodenal digestion.*—Bernard states that the bile precipitates digested azotized matters from the chyme, and even the pepsin. Corvisart says that the bile, instead of precipitating the organic substances contained in the chyme, is itself precipitated by the latter. Harley adopts Corvisart's opinion, for the following reasons:

1. Alkaline human bile, when added to pure chyme, gives a copious precipitate.

2. The same bile, added to chyme, the acid of which has been previously neutralized, gives a turbidity, but no precipitate.

3. Alkaline bile, added to a neutral solution of pepsin, gives a turbidness, but no precipitate.

4. Alkaline bile, added to distilled water, gives a turbidness, but no precipitate.

5. Alkaline bile, added to water acidulated with hydrochloric acid, gives a copious precipitate.

The bile does not change starch into sugar. The results of experi-

ments on the action of the bile on fats were contradictory; but the author concludes that bile possesses, to a limited extent, the property of emulsionizing fats. He confirms the observations of Marcet, that it is only the fatty acids which form an emulsion with bile. Bile has not the power of digesting albumen.

Pancreatic juice from a dog rapidly changes starch into sugar (Valentin); this action is not prevented by the gastric juice. It emulsionizes fat (Eberle). It further possesses the property of rendering fluid chyme loaded with peptone (Eberle, 1835), and of digesting albuminous substances (Pappenheim and Purkinje, 1836; Corvisart, 1857).

The pancreatic juice, therefore, appears to be the most remarkable of all the digestive fluids, for it seems to unite in itself the functions of the salivary, gastric, and biliary secretions.

Remarks on the Solvent Power of the Gastric Juice. By Dr. Pavy. ('Med. Times and Gaz.,' March 15th, 1856.)

The solvent power of the gastric juice depends on the presence of two substances—pepsin and an acid. The commonly received view is, that when the stomach does not contain food none of the constituents of the gastric juice are present, but that they are simultaneously produced when the mucous membrane is stimulated by the entrance of food or a foreign body. This opinion is supposed to be justified by various experiments, and by the case of the often quoted Alexis St. Martin. Dr. Pavy, however, holds that pepsin is always present, and that the acid only is produced afresh on the application of a stimulus. The plan adopted by him for the manufacture of artificial gastric juice is very simple. The lining membrane of a stomach (usually that of the pig) is stripped off, stretched on a board, and dried before decomposition has had time to set in. It is then cut into shreds, and can at any time be made into an infusion with water. With the addition of acid (twenty minims of hydrochloric acid to an ounce of water), and at a temperature of 110° Fahrenheit, this infusion possesses complete digestive powers. The legs of a frog suspended so as to dip into the fluid are dissolved entirely in three hours; but if the temperature be higher than this, the effect is diminished, and at 150° it ceases altogether; nor does any result follow from either the infusion or the acid separately, nor any (except decomposition) from the pancreatic juice, or infusions of other parts of the alimentary canal. In order to try the question, whether pepsin is or is not present in the stomach at times when digestion is not going on, Dr. Pavy made experiments with the stomach of a pig, which had travelled from Holyhead to London without food, and with that of a dog which he himself kept fasting for three days. In both cases ample digestive power existed in the infusion of the dried stomachs. If, however, pepsin be always present in the stomach, the question arises—What advantage is there in giving pepsin for indigestion? Dr. Pavy did not profess to settle this question, but he mentions one or two facts which must have, we should think, a

certain amount of interest for all prescribers and consumers of medicines. Of a large number of specimens of pepsin procured by Dr. Pavy from the best houses in the trade—houses above a suspicion of intentional unfair dealing—all but one were found to possess no digestive power whatever; in fact, to be utterly worthless. The increasing demand for pepsin, its high price, and the great amount of benefit said to be derived from its use, furnish an interesting comment on these facts. Another problem with which Dr. Pavy has occupied himself, is—why does the substance of the living stomach enjoy immunity from digestion? John Hunter considered its protection to depend on the "vital principle;" Bernard, on the constant renewal of the epithelial layer, which is always undergoing digestion. That life affords no protection, has been proved by Dr. Pavy, who finds that the legs of a live frog, and the ear of a live rabbit, when introduced into the stomach of a dog, undergo digestion just as readily as dead tissue does. Again, if the protection depended on the epithelium, then every ulcer of the stomach, and every abrasion of its mucous membrane, ought to prove fatal by perforation. In order fully to test this, Dr. Pavy stripped pieces of mucous membrane from the interior of the stomach in living dogs, and allowed them to eat afterwards. On killing them after some time, no signs of perforation were found. Dr. Pavy is inclined to believe that the alkalinity of the blood protects the tissues, by neutralizing the acid of the gastric juice.

These remarks occur in one of the Gulstonian Lectures recently delivered at the Royal College of Physicians.

Researches on the Constituents of Gastric Juice. By Dr. Marcet, Assistant-Physician to the Westminster Hospital. ('Quart. Jour. of the Chem. Soc.,' Oct., 1861.)

The results derivable from the researches recorded in this paper are—

1. That gastric juice, when its secretion is excited by means of soft (cartilaginous) bones, or the substance of windpipes, is invariably possessed of the property of rotating more or less the plane of polarization of light to the left.

2. That this optical property of gastric juice is due to its containing a substance exhibiting the chemical properties of Lehmann's *peptone*, a product of digestion; and 0·024 grammes of the substance, or a weight closely approximating to this, dissolved in 25 c.c. of water, rotates the plane of polarization 1° in Soleil's saccharimeter.

3. That gastric juice, when obtained after washing out the animal's stomach with water, and exciting its secretion by means of non-digestible bodies, such as silicious pebbles, exerts no action whatever on polarized light, thereby confirming the second conclusion.

4. That there is every reason to believe the above substance to be the only constituent of gastric juice possessed of the property of acting on polarized light.

5. That the substance to which gastric juice owes its optical properties is a product of digestion of the wind-pipes, or of the soft or cartilaginous bones used for exciting its secretion.

On the Elimination of Urea and Urinary Water, in relation to the period of the day, seasons, food, labour, health, &c. By Dr. Edward Smith. ('Proc. of the Royal Society, May 30th, 1861.)

This paper contains the results of the author's daily researches from January, 1860, to March, 1861, and comprehends about 1300 analyses for urea. The investigations are of three classes—1, those showing the hourly and daily changes in the system throughout the year, and including 336 days of actual research; 2, others showing the influence of certain kinds of food; and 3, experiments on treadwheel labour and the discipline of prisons. The former two were made upon the author, and the last upon four prisoners during one month. The method of analysis for urea is that of Liebig. The paper is a very voluminous one, and we purpose only to mention the results of the principal subjects of inquiry.

The average elimination of urea and urinary water, almost identical with the average obtained from all the experiments hitherto recorded, shows in a striking manner the advantage of carrying such inquiries through all the seasons of the year. The numbers are, 519 grains of urea, and 52 fluid ounces of urine; and the proportion of urea to body-weight is 2.75 grains per lb. The extremes are very great, viz., 298 and 748 grains of urea, and 23 and 92 fluid ounces of urine. The daily variations in the amount of urine are most striking, so that large and small quantities proceeded alternately for some days, or the quantity passed in waves of increase or decrease, or there is a progressive increase or decrease of all for many days at one time, as shown in the following instances:

Alternations,	57, 37, 62, 44, 60, and 46 fluid ounces.
Waves . .	73, 50, 41, 41, 57, 52, 54, and 63 fluid ounces.
Increase .	34, 38, 60, 62, and 74 fluid ounces.
Decrease .	68, 49, 49, 40, 42, 37, and 26 fluid ounces.

These variations are due to the influence of temperature and atmospheric pressure, but chiefly to the controlling action of the statics of the body, whereby there is a constant tendency to maintain an uniform bulk of the body, and therefore to counteract the temporary influence of any disturbing agent. Thus sudden increase must be followed by great decrease within a very few days, as 92 oz. succeeded on the next day by 26 oz., or *vice versâ*. External agencies daily and hourly tend to disturb the uniform action of the body, and the statics of the body as constantly tend to restore uniformity; and hence, with much diversity, there is uniformity established on *every long average*.

The excretion of urea and urinary water is increased in the hot season, when a long period is taken, as when the year is divided into two parts, from May to October, and from November to April. The quantities of urea and urinary water at these periods are—

Summer half year, 55°; urea, 570 grs.; urine, 55·7 fl. oz.
Winter half year, 44°; „ 480 grs.; „ 51·9 fl. oz.

Sudden heat lessens the emission of urine, and thereby of urea; and sudden cold increases the emission; but the balance is restored in a few days. The increase of urea connected with heat occurs on the *following day*. Increased atmospheric pressure increases the elimination of urea on the *same day*. Both agents act directly, and not inversely; and, when acting together, they reinforce each other; but, when opposed, they counteract each other, and destroy the uniformity of the results. The proportion of urea to each degree of temperature is precisely the same at the two periods of the year, viz., in the summer half-year, 10·36, and in the winter half-year 10·9 grains to each degree.

The period of production is not that of the elimination of urea, and hence the results are often confused. The elimination is influenced by causes acting quickly and suddenly, whilst production can only be determined by taking long averages. With increase of urine, from whatever cause, there will be increase of urea. The ingestion of water has the same relation to the egestion of urea that the inspiration of air has to the expiration of carbonic acid; and ingestion of water acts by causing an increased elimination of urine. The absence of a due distinction between elimination and production of urea, and the want of averages sufficiently long to obtain the latter result, are the chief causes of the difference of the statements made by various observers in reference to the action of certain agents.

In reference to period of the day, the author finds, by experiments made at every hour, and at every quarter of an hour, for limited periods, as well as the ordinary ones made at various hours on every day, that the largest hourly excretion occurs in the morning to about twelve or one o'clock. There is then a rapid subsidence after the early dinner until after the tea meal, when there is another considerable increase, continuing from about 6 to 9 p.m.; and afterwards the quantity rapidly falls to the night-rate of emission. The lowest rate of emission, both of urea and urinary water, occurs in the night and to the breakfast hour; and the next is found in the middle hours of the day, in the interval between the morning and evening maximum. The largest hourly emission, observed at the short intervals of a quarter of an hour, is 54 grains of urea, and 21 ounces of urine; but, when observed at the longer periods of one hour, the quantities are about 35 grains and 11 ounces. During the night the average rate is 16 grains of urea and 1 ounce of urine per hour. In all these experiments food is taken at 9 a.m., 2, 6, and 9 p.m.; and the average quantity of fluid taken is 56 ounces, and of solids, 37 ounces daily.

The largest daily emission of urea occurred on the Sunday, with rest and increased food; and there was a daily diminution as the week advanced, ending with the Friday, which is the author's hospital day, and a day on which less food is therefore taken, and more exertion made. The heaviest weight of body occurred on the Sunday, and from Saturday to Monday morning there was an average increase of 2 lbs. The weight lessened daily during the week, with considerable and

regular bodily exertion; but varied as the exertion and as circumstances temporarily increased or decreased the emission of urine. A loss of 2 lbs in weight on a day of unusual labour sometimes occurred, and extreme variation during the week, of 3 or 4 lbs., was common. The weight was taken night and morning, on retiring and rising, and after emission of urine.

Extra and unusual food, as at public dinners and evening parties, caused an increased emission of urea, which continued from one to four days, and varied from 50 to 200 grains per day. Stomach derangements and headache were usually attended by lessened excretion of urea on the day of their occurrence, followed by an increase on the day when relief was obtained.

Treadwheel labour, in which between 400 and 500 tons were lifted through one foot daily, and an amount of exertion made which was equal to walking thirty miles per day, the increase in the elimination of urea was only, on the average, 19 grains daily on treadwheel days over that of days of light labour, and 36 grains over that found on Sundays; but the proportion of urea to body-weight was so high as more than $4\frac{1}{2}$ grains per pound. The prisoners were well fed, but were thin, and much below the average weight. There was the least elimination of urea on Sundays, with the same food, but with rest; but the loss of urea in the urine was exactly supplied by an increase in the nitrogen of the fæces on that day. Hence, with less labour there was less assimilation of food. The fæces were so large in the prisoners as to be nearly 9 ounces per day, and contained upwards of 40 grains of nitrogen. The loss of food was therefore very great, and, in point of nitrogen, was as great as the quantity contained in one pint of milk.

The influence of tea and coffee, and particularly of alcohol, was to lessen the excretion of urea and urinary water for a short period; but on the third day the normal quantity of urea was restored. Tea lessened the urea the most, and alcohol lessened the urinary water the most, viz., to the great extent of an average of twenty ounces during three days. Coffee had less influence in either direction. A final analysis of the food and fæces was made by Mr. Manning in all the experiments upon the prisoners.

The author discusses many other points, and concludes his paper with a consideration of the relations of urea and carbonic acid, and those of urea with nutrition, which we cannot quote. As urea is evidently a mixed product of tissue-waste and food, it cannot be accepted as a measure of either alone. It is very probable that the determination of the amount of urea evolved is of less value in health than has hitherto been supposed, and that the most inviting field for inquiry is the determination of the proportion of nitrogen in the food which obtains admission into the blood to that which remains unappropriated in the alimentary canal.

The only measure of muscular exertion is the evolution of carbonic acid by the lungs.

Contributions to the Physiology of Uric Acid. By Dr. Stokvis, ('Archiv f. die Holländischen Beiträge z. Natur u. Heilkunde,' 1860; 'Edinburgh Medical Journal,' December, 1861.)

Cloetta found uric acid in the liver of the ox. Stokvis has met with it in the liver of the pig, dog, calf, horse, and man. In these different livers he also found leucin, tyrosin, sometimes inosite, and once (in the pig) crystals which resembled allantoin. In the spleen of man, the ox, calf, pig, and horse, uric acid was found; in the horse in great quantity. Neither Stokvis nor Cloetta could find any in the kidneys of the horse; but sometimes in the kidneys of man and of the calf a mere trace was detected. The urine of rabbits, dogs, cows, and pigs, contains *no* uric acid. This fact gives rise to the question, is uric acid decomposed in the blood? Neubauer gave rabbits uric acid, and always found an increase in the quantity of urea in their urine. He could not determine whether oxalic acid was also formed, because the urine of the rabbit contains it in the natural state. This result had been denied by Gallois; and Stokvis was thus induced to make experiments on man and on the dog. Experimenting on himself, he found distinct evidence of the conversion of uric acid into urea. In dogs which were fed on spleen containing uric acid, he found no satisfactory proof (in the urine) of the fact in question; the only result of experiments on these animals being, that the uric acid of the spleen on which they were fed did not appear as such in the urine. Injections into the blood of neutral urate of soda killed two dogs, in spite of all precautions; but with urate of ammonia an experiment was more successful, and gave as the result distinct evidence of an increase of the urea in the urine after the injection had been made. It is questionable whether allantoin results from the decomposition of uric acid. Stokvis could not find any in the urine after the use of uric acid. Wöhler and Frerichs say that allantoin itself is decomposed in the blood; whilst Wöhler states that, under the influence of nitric acid, allantoin is changed into urea. In two experiments on dogs, in which allantoin was given, the first was in favour of the supposition that allantoin is converted into uric acid; the other was not so conclusive. Frerichs and Wöhler have further determined, that oxalic acid results from the decomposition of uric acid in the organism. After taking uric acid, Stokvis could not determine microscopically the presence of oxalates in his urine. To determine the parts of the organism in which the decompositions of urea occur, Stokvis made two experiments, and the results gave the most assurance that the liver is the organ in which the changes of uric acid are effected.

The Influence of an Acid in producing a Diabetic State of the Urine. By Dr. Pavy, Assistant-Physician to Guy's Hospital, &c. ('Guy's Hospital Reports,' 3rd series, vol. vii, 1861.)

The acid used in these experiments was phosphoric acid of pharmacopœia strength. In some instances the acid was injected into the

general circulation; in others it was introduced into the duodenum or some other portion of the small intestine, the introduction into the stomach being followed by vomiting. Five experiments performed in the latter manner show, very clearly, that an excess of acid in the system occasions the production of saccharine urine.

No. 1. In a medium-sized dog, which had not been fed for twenty-four hours, two ounces of phosphoric acid were injected into the upper part of the small intestine, in half ounce portions, at intervals of half an hour. Half an hour after the last half ounce had been injected, the life of the animal was destroyed. The bladder was found distended with urine, which gave a strong reaction of sugar. It had been before ascertained that it was previously free from this principle. The liver presented an ordinary appearance and behaviour. There was no plugging up of the portal vessels; indeed, the blood which was collected during the post-mortem examination scarcely possessed any coagulating property.

No. 2. Fourteen drachms of phosphoric acid were introduced into the duodenum of a largish dog, which had not been fed since the previous day. In an hour and a half's time there was a large quantity of urine in the bladder, and it presented a strong reaction of sugar.

No. 3. A medium-sized dog. Three hours after food, ten drachms of phosphoric acid were injected into the duodenum. The urine in two hours' time gave an orange-yellow reduction with the copper solution. Ten drachms more were now again injected; and two hours afterwards the life of the animal was destroyed. The urine gave a still stronger reaction of sugar, namely, an orange-red reduction with the copper solution. The liver presented a natural appearance. The blood collected from the heart, it was found, had undergone no coagulation whatever by the following day.

No. 4. A small dog. Five hours after food four drachms of phosphoric acid were injected into the duodenum. In one hour and a half the animal was killed. The urine did not contain any sugar. The liver looked natural, and behaved in the ordinary manner. The blood underwent its usual coagulation.

No. 5. A medium-sized dog, that had not been fed for twenty-four hours. Thirty drachms of phosphoric acid were injected into the duodenum; and two hours afterwards the life of the animal was destroyed. There was no urine found in the bladder. The intestine looked black, as if in a state of mortification. Some of the large venous trunks in the liver were plugged up with coagulated blood. The liver, examined a short time after death, gave only a moderately strong reaction of sugar, and none of the presence of amyloid substance.

"It will be observed," says Dr. Pavy, "that in the first three experiments saccharine urine was produced by the influence of phosphoric acid introduced into the intestine. In the fourth no sugar was found, because, I apprehend, the quantity of acid employed (four drachms) was too small. The fifth is incomplete, on account of there having been no urine to test; but this experiment is of interest in showing, that a large quantity of the acid injected into the intestinal canal may

produce the same kind of effect, as regards plugging up the larger veins of the liver, as when introduced directly into a branch of the portal system.

"From a consideration of what has been brought forward, it is evident, that the presence of an acid in sufficient amount in the system so perverts the normal processes of life as to occasion a considerable production of sugar, which, passing into the blood, escapes by the urine. Such is the fact, and, as I have already stated, I consider it to be caused by the effect of the acid upon the liver. The chemical disposition of the amyloid substance to transform into sugar is, I conceive, from the unnatural state of the blood, allowed to come into play; and thus, the result that occurs.

"In my preceding communication I have mentioned, that destruction of the superior cervical ganglia of the sympathetic occasion a temporary diabetes; and, that this diabetes is prevented by the previous introduction of carbonate of soda into the circulation. Now, in accordance with what might be expected, the injection of the acid, and the operation on the sympathetic, together produce a saccharine state of the urine, like either does separately. In one case where I analysed the urine, I found 7·3 grains of sugar per ounce, an hour and a half after the operation and the injection had been effected.

"I consider it a point of interest, upon which, however, I make no comment at present, that I have observed a jaundiced condition produced by the operation on the sympathetic in conjunction with the injection of the acid. The urine has been deeply tinged with bile, and has given the characteristic play of colours upon the addition of nitric acid. In the experiments with the injection of the acid alone, it has been a matter of constant observation, that a flow of bile has been excited into the duodenum and towards the stomach, the pyloric extremity of which has been highly tinged of a yellow colour.

"Although a diabetic state of the urine may be thus artificially induced, apparently by the direct chemical agency of an acid upon the liver, yet I am not prepared to say that, beyond the addition of another significant fact to our knowledge upon this matter, any at present available assistance has been gained towards unravelling the nature of the diabetic disease. Possibly, in some cases, an insufficiently alkaline state of the portal blood may be the cause of a temporary slightly saccharine state of the urine; but, from the observations I have conducted upon diabetics, I certainly am not permitted to think that such is the cause of the well-marked diabetic disease. The immediate cause of the production of sugar in idiopathic diabetes, and in diabetes artificially produced by operations on the nervous system — the sympathetic and cerebro-spinal—still remains an open point for discovery.

"Usually, in my experiments with the acid injections, the liver has been found fairly charged with amyloid substance; but, in a few, an absence of this principle has been observed, although only a short time has elapsed between the injection and the period of destruction of life."

On the Influence of Alkalies in checking the production of Artificial Diabetes, and in leading to a rapid disappearance of Amyloid Substance from the Liver. By Dr. Pavy, Assistant-Physician to Guy's Hospital, &c. ('Guy's Hospital Reports,' 3rd series, vol. vii, 1861.)

The summary of the facts brought forward in this communication is—

That the introduction of carbonate of soda into the circulation prevents the production of saccharine urine after lesions of the sympathetic otherwise occasion it.

That the carbonate of soda injected into the general venous system does not prevent the urine from becoming saccharine after the destruction of life, when the circulation is kept up artificially; but, injected into the portal system, so that all may pass through the liver, it has the effect of keeping the urine entirely free from sugar.

That carbonate of soda, injected into the portal system during life, causes a rapid disappearance of amyloid substance from the liver, without any sign of the production of sugar.

That in the disappearance of the amyloid substance, under the influence of the carbonate of soda, it is not concealed nor transformed into sugar, nor destroyed by any direct chemical power possessed by the carbonated alkali. The facts would suggest that it is transformed by a process of the nature of catalysis, the product having escaped as yet being discovered.

That the carbonate of soda, injected into the liver after death, does not effect a disappearance of the amyloid substance, but even in moderate quantity holds the saccharine metamorphosis completely in check.

That there is probably a close connection between the disappearance of the amyloid substance, the production of fat, and the condition of the bile.

Researches on Asphyxia; with observations on the use of the Hot Bath in restoring Suspended Animation. By Dr. A. T. H. Waters, of Liverpool. ('Proceedings of the Royal Medical and Chirurgical Society,' March 14th, 1861.)

Physiologists are agreed as to the order in which the arrest of the vital actions takes place in asphyxia, but not as to the duration of the heart's action, nor yet as to the best mode of treatment in suspended animation. The different societies, whose aim is to save life, issue rules of the most opposite character for the restoration of those apparently dead. Two important points remain to be decided:—first, the period after asphyxia has commenced during which treatment is likely to be successful in restoring animation; and, secondly, the value of the hot bath as a remedial agent. Experiments have been instituted by the author with reference to the following questions:—1. How long does the heart continue to beat in asphyxia? 2. What are the effects of the hot bath on an asphyxiated animal—first, after

all respiratory movements have ceased, and are not re-excited; secondly, when respiration has been re-excited, and is being feebly carried on? It is difficult to decide with any degree of certainty with regard to the first question. Certain circumstances tend to throw a doubt on the generally received opinion, that "in asphyxia the movements of the heart cease in a few minutes after the cessation of the functions of animal life." The second question is more readily answerable, but the author is not aware that any experiments bearing directly on it had been performed previous to his own. The subjects of experiments were dogs, cats, and rabbits. They were drowned in water varying in temperature from 40° to 50° Fahr., and in one instance 36°. On being removed from the water, after every external symptom of life had disappeared, they were opened by the removal of the anterior part of the chest, so that the movements of the heart could be observed. Some of the experiments were parallel—*i.e.*, two animals of the same age and size were chosen, and after being drowned in the same way, were opened at the same time; the difference being that one animal was, previous to being opened, put into the hot bath at 100°, and the other was left exposed to the atmosphere. The number of animals experimented on, as just mentioned, was 28; of these, two being set aside which were submerged for an hour, in 18 the heart was found beating when first observed, in 8 its action had ceased. The animals were opened at periods from the commencement of asphyxia varying from the fifth up to the thirteenth, and in one instance the twenty-first minute. The average period during which the ventricles continued to contract was nineteen minutes; the longest period was in a rabbit—forty-five minutes. With regard to the first portion of the second question, the morbid appearances of the animals put into the hot bath were compared with those of the animals not so treated. In the animals put into the bath, the lungs were much more congested, more full of blood; they were firmer in substance and specifically heavier than those not so treated. Both sides of the heart were loaded with blood. In some instances the blood was coagulated in the vessels of the lungs, the systemic veins, and the cavities of the heart. The blood was generally less fluid than in the animals not put into the bath, and coagulated more rapidly when removed from the vessels. In no instance did the bath produce a respiratory effort or any movement whatever on the part of the animal; it seemed, further, to shorten the duration of the heart's action. With regard to the second portion of the second question, experiments of the following character were performed:—Animals were drowned in water from 45° to 50° Fahr.; they were kept under water, some for one minute, some for one minute and a-quarter, and one for two minutes. When removed from the water they were placed on the table, exposed to the air. They soon began to breathe feebly. In order to compare the effects of the hot bath with those where all treatment were omitted, some of the animals were left to themselves, others were put into the bath as soon as respiration had been re-excited. Thirteen experiments were performed—twelve on rabbits, one on a cat. Of the thirteen, seven were put into the hot bath; of these, six died, at periods varying

from two to twenty hours after submersion. Six animals were left to themselves; of these, four recovered and two died, both between the eighth and twentieth hour after submersion. The animals which had died after being put into the hot bath presented the following morbid appearances. The lungs were dark-coloured, full of blood, firm, almost liver-like in appearance. In some instances portions sank in water; the air-tubes were empty; there was blood in all the cavities of the heart, in one instance coagulated. In the animals which died after submersion, but which were not put into the hot bath, the lungs were somewhat firm and congested, but to a less extent than in the others. The experiments appear to the author to be sufficient to establish the principle of the injurious influence of the hot-bath, both when asphyxia is complete and when recovery is commencing. In the former case the bath momentarily increases the circulation; but respiration being in abeyance, the lungs become loaded with blood, and the left side of the heart distended. In the latter case, respiration being imperfect, engorgement of the lungs takes place, and subsequent arrest of the heart's action. The following conclusions are drawn by the author from his experiments:—1. That in asphyxia by submersion the ventricles of the heart do not, as a rule, cease to contract "in a few minutes after the cessation of the functions of animal life," but that in many instances their action continues for a very considerable period, and that this serves to explain how recovery has taken place after lengthened submersion. 2. That in cases of asphyxia where respiration has altogether stopped the effects of the hot bath are—to produce an accumulation of blood in the lungs and in the left side of the heart, together with a tendency to coagulate on the part of the blood; that it does not tend to prolong the action of the heart, but rather to paralyse its movements and diminish the duration of its contractions; that it does not excite respiratory efforts, and prevents artificial respiration being properly carried out. 3. That in cases of asphyxia where respiration has been re-excited and is being feebly carried on, the hot bath, although in some instances it seems to have no immediate bad result, yet has a tendency to produce a fatal issue some hours after its use, by causing extreme congestion of the lungs, together with consolidation and collapse of the pulmonary tissue The following practical inferences are drawn from the above conclusions:—1st. That efforts to restore animation should be made in all cases where asphyxia has not been of very prolonged duration. 2nd. That the prolonged use of the hot bath in asphyxia is not only inefficacious, but dangerous; and that its temporary use appears to be attended by no direct benefit. So far as any means similar to that of the hot bath are likely to produce respiratory movements, the alternate dashing of hot and cold water on the body is probably the most efficacious. 3rd. That it appears safer practice to omit all artificial treatment, when respiration is going on feebly, than to make use of the hot bath. 4th. That in the treatment of asphyxia all efforts should be primarily directed to restoring, or continuing, the respiratory movements; and all measures tending to load the lungs or embarrass the respiration should be avoided. The author believes that the best mode of performing artificial respiration at present *known is* that recommended by Marshall Hall.

A Manual of the Dissection of the Human Body. By LUTHER HOLDEN, F.R.C.S., Assistant-Surgeon to, and Lecturer on Anatomy at, St. Bartholomew's Hospital. Illustrated with numerous wood engravings. Second edition. (London, Churchill, 1861, pp. 576.)

Mr. Holden was certainly a most popular demonstrator, and is, we have no doubt, an able lecturer on anatomy, but this book is adapted for the scene of his earlier labours, the dissecting-room, rather than the lecture theatre.

The first edition of this dissecting manual was popular at St. Bartholomew's, but never, we believe, came into general use among medical students; but the present, which is improved in every way, and especially by the addition of illustrations, will probably have a wider circulation. Mr. Holden evidently aims at simplifying the sometimes obscure and complicated details of anatomy as far as possible, and in this he has, we think, very fairly succeeded, but occasionally omissions occur which are to be regretted, if this is to be *the* manual of dissections.

The standard of anatomical knowledge at the College of Surgeons, to which examination most students submit themselves, is by no means of a high order, and the majority will find in Mr. Holden's work quite enough for their purpose; but an ambitious pupil, aiming at anatomical honours at the University of London, or some similar examination, would, we fear, fall very short, were he to trust to it alone. Every school has its own peculiar mode of conducting dissections, and therefore we were not surprised to find the various parts of the body described in an order different to that we had been accustomed to, but we would venture to suggest whether it would not be an improvement to take the important region of the perinæum before dissecting the abdominal viscera, &c.

The description of the brain may be taken as a very favorable instance of condensation and clearness, for the whole of it is given in little more than twenty pages, in which are included all the prominent features of the encephalon, but those minute details of the arrangement of fibres, which are *caviare* to the majority of students, and which, if inserted, would not be read, are entirely omitted. The illustrations vary in character, from simple diagrams, such as demonstrators chalk upon the slate daily, to highly finished woodcuts. They cannot but assist the student in his dissecting-room work, and will, no doubt, be most useful in recalling the features of a dissection when studying away from the subject.

V.

REPORT ON MATERIA MEDICA AND THERAPEUTICS.

On the Antagonism between Opium and the Mydriatics Belladonna and Stramonium. By (1) Dr. W. NEWMAN, of Fulbeck, and (2) Dr. C. C. LEE, Resident Physician in the Pennsylvania Hospital. (1) 'British Medical Journal,' 13th July, 1861; and (2) 'American Quart. Jour. of Med. Science,' Jan., 1862.)

THE subjoined cases afford further evidence of the reality of the antagonism under consideration, and we leave them to tell their own tale without further comment:

(1.) *Dr. Newman's Case.*—Mrs. T—, æt. 55, anæmic and debilitated, was under treatment for some time with mitral disease.

June 16th, 1861.—An emplastrum Thuris cum Belladonnâ was applied to the cardiac region, in the hope of quieting the excessive palpitation.

19th.—She was seized with severe neuralgic pain. For the relief of this symptom, three doses of acetate of morphia, one fourth of a grain in each, were supplied. The pain was absent in the evening; yet, from some error of the attendant, one dose was given at nine p.m., and another shortly after twelve p.m. The third dose was mislaid. It would seem that the patient slept heavily during the greater part of the night. She awoke about six a.m., and found four pills loose in the bed. Two of these she swallowed at once; the other two were retained untouched. She can give no explanation beyond saying that she took the dose in the hope of having more sleep.

20th, seven a.m.—Her daughter found her sitting up in bed, highly excited, "not herself at all." The face was flushed and dark; the eyes were very glistening. She was talking much and incoherently.

At twelve a.m. I saw her. The first thing that attracted my notice was the exceeding dilatation of the pupils, the iris being but a mere ring. The pulse was rapid and feeble; the heart's action was tumultuous to a degree. There was continual busy delirium, snatching at the bedclothes, &c. There had occasionally been a few minutes' drowsiness, but no sleep since she was first seen at seven a.m. She complained much of dryness of the mouth and throat.

Five p.m.—The symptoms were less marked, and she was much quieter.

The next morning all traces of the excitement had disappeared.

Some days passed before the mystery of the pills found in the bed was cleared up. Some more pills were then detected by her daughter in the bed, and were submitted to me for inspection. In appearance and smell

they were identical with those mentioned as remaining from the first batch on the morning of the 20th inst.; and more close examination showed the moral certainty that in both instances they had been detached from the plaister mass. . . . .

It seems, however, that the point of this accidental experiment is the complete absence of sleep from the moment that the belladonna had fairly entered the system; the immediate dilatation of the pupil replacing the contracted state that morphia would tend to produce; there being thus not merely the masking of the effects of the morphia, but absolute control and replacement by the symptoms due to belladonna.

I may mention also that I have had full reason from prior experience to be satisfied of the great susceptibility of this patient to the action of opium in any of its forms.

(2.) *Dr. C. C. Lee's Cases.*—On the 3rd September, 1861, three well-marked cases of poisoning by stramonium seeds were admitted to the Pennsylvania Hospital. One was a man, aged 31; the other two were women, aged respectively 34 and 58 years. The history of the accident was as follows:—The two women were about moving into a new house, and the man was assisting them with the furniture, when, in passing an unoccupied room, he saw in an open closet a bottle filled with what he supposed to be brandy. He poured out a cupful, drank it, and offered some to the women, who both drank of it—the elder about a gill, and the younger only one or two mouthfuls. A child of the latter was also given a little of the mixture, and it was in this case that the effects of the poison were first noticed. Within four or five minutes after taking the draught the child became violently flushed in the face, the eyes glittered and rolled about, and it tottered so as almost to fall from its chair. This alarmed the mother, who at once supposed they had taken poison, and, though already giddy and half blind, she managed to run with the bottle to a neighbouring druggist, who confirmed her suspicions. With much difficulty she again reached her house, where she found the other woman and the man lying speechless on the floor; and as their friends, who crowded around them, could afford no assistance, the three were put into a waggon, and driven without further delay to the hospital. The bottle, which contained a number of small, black, kidney-shaped seeds, and a little whisky, was brought with them, and, as soon as examined, the seeds were pronounced *stramonium*. This was confirmed by the appearance of the patients, which was very striking.

The man and the elder woman were nearly comatose, their faces flushed to an almost violet hue, the conjunctivæ injected, and the pupils were insensible to light, and so strongly dilated as to leave visible merely a rim of iris; the skin of the face and upper extremities were burning hot, the tongue and throat parched and dry, respiration slow and laboured, pulse 100, and very tense and full. The younger woman had taken a smaller dose of the poison than the others, and had reached only the maniacal stage of its influence; the skin was scarlet and burning hot, and the mydriasis as marked as in other cases, the tongue parched, intense thirst, but no constriction of the fauces on swallowing; the respiration, however, was hurried, the pulse fluttering, and beating 140 to the minute. The patient was violently delirious, resembling, in a marked degree, the most excited stage of *delirium tremens*, struggling to get out of bed, and continually rolling from side to side; she was unable to stand by herself, and, unless supported, would have fallen to the ground. When her hands were not restrained, it was observed that she pursued imaginary objects in the

air, or picked at the bedclothes, as in the delirium of typhoid fever. No frothing at the mouth, or relaxation of the sphincters, said by Taylor to characterise poisoning by stramonium and belladonna, occurred.

As neither of the women had vomited since drinking the poison, I first resorted to the stomach-pump, which, with the assistance of my colleagues, was used freely. About a pint of thin, dark-brownish liquid was pumped up, and carefully examined, but contained no seeds. The stomach was then washed out with tepid water, but no seeds were obtained. The symptoms being, in all respects, similar to those of poisoning by belladonna, an antidote to that narcotic, on which I place entire reliance, was next administered, viz.:—Opium in doses sufficient to secure a full opiate impression, as indicated by contraction of the pupil. Forty drops of laudanum were immediately ordered to each of the women, and having at hand some of Magendie's solution of morphia—in this hospital only used for hypodermic injections—I gave them fifteen minims a piece, holding in solution a half grain of the salt, every half hour, until each had taken two grains.

As considerable debility had been induced by their struggles when the stomach-tube was used, a half ounce of brandy was added to each dose of the morphia; this was deemed the more necessary, because, notwithstanding the well-known stimulating effects of stramonium in the first stage, this period had already passed. The result justified our expectations; for in two hours the pulse of the younger woman had fallen to 90 beats per minute. This patient was now nearly well, and the other woman in a fair way of recovery; the morphia was, therefore, diminished to a quarter of a grain every hour, with an ounce of wine instead of brandy; this was continued through the night, and the following day the women were discharged from the hospital cured.

The man exhibited much the same symptoms as the women, catching and striking at imaginary objects around him, but the retina was insensible to light, for a hand passed close to the eye failed to make him wink, unless the cornea was touched; he was also more comatose at first, and with a more feeble and rapid pulse, 150 per minute. Another alarming symptom was an apparent somnolency, which, according to some authors, mark only the worst cases. Thus, Dr. Stillé says, "At no period in the progress of the symptoms, *until death grows imminent*, is there the least tendency to sleep; on the contrary, there is an obstinate insomnia; and on the recovery of the patient, he retains no distinct recollection of what has occurred."

Before leaving home he had been given two or three emetics, which had acted very freely; the stomach-pump was, therefore, not used; and he was at once ordered forty drops of laudanum, to be repeated in ten minutes, after which he was given a half grain of muriate of morphia every half hour, until three and a half grains of the salt had been taken—a larger amount than in the other cases, as he had imbibed a much larger dose of the poison; this, with ice to the head, constituted his entire treatment. He rallied during the night, slept a little, and the next morning was able to walk, and read large type. Some abnormal dilatation of the pupil and vertigo remained, however, during the day; by evening he was quite well.

The effect of the morphia was equally evident in each of the foregoing cases. They had been brought to the hospital and subjected to treatment about an hour and a half after the poison was swallowed; within an hour after the first administration of the antidote—for such, I think, it may justly be considered—a decided amelioration of all the symptoms, especially

of the mydriasis, was perceptible; while in three hours the mildest case was quite well, and the other two so much improved as to excite no further uneasiness. That this improvement was not due merely to the stomach-pump or emetics is apparent, from the fact that the man, who had vomited profusely, presented the most alarming symptoms of debility and coma; while in the case of both the women, the fluid obtained through the stomach-tube resembled rather the ordinary contents of the stomach than the stramonium mixture. There was every probability, indeed, that the small amount swallowed—and the concentrated strength of the mixture may be inferred from its effects—had been absorbed before the evacuants were used.

As corroborative of the results obtained in the preceding cases, and as further illustrative of the mutual antagonistic influence of opium and belladonna, a brief description of two other cases that occurred to me while resident-physician in the Philadelphia Hospital, Blockley, may not prove uninteresting. The first, a child, aged six years, had been given, in mistake for syrup of rhubarb, a drachm of *succus belladonnæ*, an unofficinal preparation, very concentrated, and only used in collyria. The characteristic symptoms of belladonna poisoning were almost immediately apparent; the child's face became scarlet, and it tottered and fell insensible to the floor. I was instantly sent for, and found the flush on the face deepening to a violet hue, the eyes fixed and staring, the pupils dilated to the utmost, tongue dry, pulse slow and bounding, and the child almost comatose. No stomach-pump was at hand, and I at once resolved to test the effect of opium. Twenty drops of laudanum by the mouth, and the same amount by the rectum, were simultaneously given, and at intervals of a half hour the dose of twenty drops was repeated, until the little patient had taken one hundred and twenty drops in all. After the third dose the pupils began strongly to contract, the purple hue of the face to fade, and in three hours the child was well, and running about the room.

The second case alluded to was, on the contrary, one of opium poisoning, occurring in a child aged two years. The quantity of laudanum taken could not be ascertained, for the mother who had given the drug (as was supposed for the purpose of infanticide), obstinately refused to answer any question on the subject. Enough, however, had been swallowed to render a fatal prognosis almost positive. The skin was pale, cold, and clammy; pulse feeble, and beating only forty to the minute; respiration slow and laborious; pupils excessively contracted, and coma profound. A galvanic battery was sent for, but when obtained, was so out of order as to be useless. Some tincture of belladonna, however, was at hand, and was instantly given is doses of fifteen minims, repeated at intervals of twenty minutes, until four doses were taken. The first perceptible change was after the second dose, when the temperature of the skin rose several degrees, this was gradual, but was distinctly felt by the hand. A few minutes after the third dose of belladonna the eyes were carefully examined, and the pupils, although still contracted, were no longer insensible to light; the skin was much warmer, and a faint blush appeared on the face and neck; respiration 25; pulse 86 per minute. When spoken to, the child now opened its eyes, and showed signs of intelligence; but, as some drowsiness yet remained, the fourth and last dose of belladonna was given at the same interval as before. Its effect was rather more rapid and striking than was desired, for in a few minutes after taking it, the child's face, neck, and arms became flushed, as red as in the scarlatinal eruption, and the pupils dilated much beyond their proper size. The child started up in bed, shouted, and laughed immoderately, and, in fact, exhibited every

sign of the first stage of belladonna intoxication. Not wishing to substitute one poison for another, I now stopped the belladonna, and in less than an hour the scarlet blush was imperceptible, the pupils contracted and dilated regularly, and the child was to all appearance well; no vomiting or other disagreeable sequela occurred.

In the course of his paper, Dr. Lee refers to some cases which we have noticed on previous occasions. He also refers to one, which escaped our notice, by Dr. Lopez, of Mobile, and recorded in the 'North American Medico-Chirurgical Review,' for Jan., 1860:

Dr. Lopez' Case.—This case is that of an apothecary at the Marine Hospital, Mobile, who poisoned himself by the application of a large belladonna plaster to the knee, after the cuticle had been removed; there existed nausea, giddiness, mydriasis, and extreme prostration. Having frequently tested the reciprocal influence of opium and belladonna, Dr. Lopez at once prescribed a drachm of laudanum, to be followed by fifteen drops every half hour until the symptoms abated. The first dose sufficed to antagonise the belladonna in thirty minutes.

On the Antagonistic Effects of Opium and Quinine.
By Dr. NIVISON. ('Amer. Quart. Jour. of Med. Science,' July, 1861.)

Dr. Nivison's attention was drawn to this subject by the assertion of M. Gübler that these substances ought never to be administered together, so antagonistic are they in their action. Dr. Nivison maintains that this antagonism only influences the bad effects of these substances, and enables us to prescribe them simultaneously with advantage under circumstances when they could not otherwise be given. Some of these he enumerates:—1. Many acute inflammatory conditions will promptly yield to the influence of full doses of opium, but such doses cannot be given without the risk of so far paralysing the nervous energies as to induce fatal congestions. Quinine, however, pre-eminently possesses the power of giving contractile action to the capillaries, and thus overcoming contraction; and experience has shown that if the proper amount be combined with opium in these cases, a sufficient quantity of the latter may be safely given. 2. A frequent objection to the free use of opium is its tendency so far to reduce the biliary and renal secretions as to incur the risk of fatal toxæmia. Combined with quinine, this tendency is, to a great extent, counteracted. 3. Opium frequently reduces the respiratory action so that the blood becomes imperfectly aërated—an effect obviated by the addition of quinine. 4. The notoriously unpleasant after-effects of opium do not usually appear when it is given with quinine. 5. In cases of extreme exhaustion the free use of opium is the sheet-anchor; and in the reduced state of the sensibilities of the system the extent of its toleration is astonishing. Under these circumstances, however, it not unfrequently happens that the quantity which is barely enough to produce the reaction, is not sufficient when this does occur to produce unpleasant narcotism. By the addition of quinine the desired action is secured with a less amount of opium, while the more protracted operation of the quinine will enable us to maintain the reaction for any desired length of time, without those frequent repetitions

of the opium that otherwise would be necessary. So, too, persons in a state of narcotism from overdoses of opium may be often promptly roused by a full dose of quinine. This is especially the case in young children, who usually tolerate opiates very badly. 6. A large proportion of the persons who, in consequence of their idiosyncrasy, cannot take opium, are enabled to do so when it is combined with quinine.

On the other hand, certain well-known effects of quinine are often desirable, where, from peculiarity of circumstances, we either cannot obtain them, or, doing so, we bring with them such an undesirable train of concomitants, that we are forced to dispense with it. Thus: 1. The prominent feature of many diseases is dangerous *congestion* of some internal organ, for relief of which the contractile action of quinine on the capillaries is very desirable; but we find on trial that by it we only impart a peculiar *excited* action to the general circulation, under the influence of which the congestion is aggravated rather than relieved. The addition of a sufficient quantity of opium to control this excitement, will not only ensure the action of the quinine on the capillaries, but by diverting the general circulation to the surface, aids still further in overcoming the congestion. In this class of cases either opium or quinine, acting alone, would almost certainly add to the existing congestion; in combination the bad effects are neutralised, and the two remedies co-operate in producing the desired relief. 2. There are many forms of *inflammation*, to which, *mutatis mutandis*, the above remarks will apply with equal force. Judicious combinations of these remedies will often give us the most perfect control of the vital forces, and enable us to fulfil the various indications in the most satisfactory manner. Valuable information on these points may be found in the 'Dublin Hospital Gazette,' July, 1856, and 'Dublin Journal,' August, 1856. 3. Quinine and opium may often be employed most advantageously in combating various disturbing symptoms in *fevers*. 4. There are various affections usually termed *neuralgic*, which are palliated by opiates, and sometimes cured by quinine. These cases will often yield more speedily to the combined influence of opium and quinine than to any other known remedies. 5. There are numerous morbid conditions belonging to the *neuroses*, often associated with anæmic states of the system, where the true etiology of the disease can doubtless be traced to *defective nerve-nutrition*. We have already had occasion to notice the action of both opium and quinine in modifying and improving the function of nutrition. In the present state of our knowledge, there is nothing that would preclude the idea that this improved nutritive action may extend to the nerve-tissue. But whatever the *rationale*, the fact remains, that very many of these neuropathic conditions will yield to the combined action of these remedies.

On the Influence of Belladonna upon the Pneumogastric Nerve. By Mr. HUGHES, Surgeon to the Brighton Orthopædic Hospital. ('British Medical Journal,' May 20th, 1860.)

Dryness of the throat and dysphagia were two of the earliest and most invariable symptoms of the influence of belladonna. On what do they depend? Mr. Hughes answers as follows:

"The pneumogastric nerve appears to preside over alike the muscular fibre and the secreting apparatus of the alimentary canal from the fauces to the stomach. Claude Bernard has ascertained the result of its division upon the stomach. 'The section was made during the free flow of gastric juice (through a canula previously introduced into the stomach), excited by the presence of an alimentary bolus. The flow immediately ceased, and the mucous membrane, which had been tense and turgid the moment before, became withered and pale. On introducing the finger into the stomach itself, the walls were perceived to be perfectly flaccid, and there was no longer the gentle pressure which had been previously felt.' (Carpenter's 'Human Physiology,' 5th ed., p. 87). It stands to reason that, if such be the effect of loss of pneumogastric influence on the stomach, similar phenomena—check of secretion and diminished muscular power—higher up in the alimentary canal, must be referred to depression of the influence of the same nerve. Consequently, the dryness of throat and dysphagia caused by belladonna must result from a depressant influence exercised by it on the pneumogastric nerve.

"That belladonna has such an influence will further appear from a consideration of its effects on disease. Hooping-cough and asthma are admittedly spasmodic affections, in which irritation of the pneumogastric nerve is at the bottom of the phenomena: and both of these affections are singularly under the control of belladonna and its congeners. Stramonium is the favorite remedy in asthma; and the use of belladonna in hooping-cough is becoming more and more general. In the former case, we have the evidence of direct experiment for our theory. Galvanisation of the pneumogastric has been found by Valentin to produce constriction of the trachea and bronchial tubes; while on the other hand, in animals poisoned by belladonna and stramonium, these tubes have been found lax, and have refused to contract under the strongest stimuli. Lately, moreover, an enterprising French surgeon has attempted and (apparently) achieved the cure of asthma by injecting a solution of atropine upon the pneumogastric nerve in the neck. Another affection in which belladonna has been found very beneficial, and in which the pneumogastric is the seat of irritation, is obstinate spasmodic vomiting. A patient was suffering from cancer of the pylorus; the usual incessant vomiting took place. Belladonna was given, and it ceased. After death the stomach was found lax and enormously distended. Mr. Amesbury tells me he once had a case of obstinate vomiting in pregnancy. All the usual remedies failed; at length he tried belladonna, with complete success. Here again, as the pneumogastric is the motor nerve of the muscular coat of the stomach, a sedative influence exercised by the belladonna upon this nerve will explain the phenomena.

"The practical result from the above facts will be, that we shall be led *rationally* to the use of belladonna and its congeners in all affections of the pneumogastric nerve. Laryngismus stridulus must therefore be added to the above-mentioned morbid conditions. I have lately used belladonna (in combination with nitric acid) in every case of common cough which has come under my notice, and with far more marked success than I have obtained from any other remedy."

On the Use of Lump-sugar in Alcoholic Intoxication. By Dr. J. Le Cœur. ('Etudes sur l'intoxication alcoolique,' Brochure, 1860; and 'Gaz. Hebd. de Méd. et Chir.,' January, 4th, 1861.)

In this brochure M. Le Cœur says he has very frequently found that the crunching a few pieces of lump-sugar has a very positive influence in counteracting the intoxicating effects of alcoholic drinks. He does not see exactly how to explain the *modus operandi* of the remedy in the cases in which he has recommended this mode of treatment to be carried out, but he thinks it possible that the sugar may combine with the substances present in the stomach, and counteract fermentation or correct acidity, one or both.

On the New Anæsthetic, Kerosolene. By Dr. Ephraim Cutter, of Woburn, Mass., U.S. ('Amer. Med. Times,' and 'Pharmaceutical Journal,' October, 1861.)

This new anæsthetic, kerosolene, is obtained as a product, which hitherto has been thrown away as useless, in the manufacture of kerosene oil by the destructive distillation of coal, not coal-oil nor tar. The crude volatile matters that come over from the still at a temperature of 150° Fah., are condensed and treated with sulphuric acid, and then redistilled. From forty to sixty thousand gallons could be annually made by one establishment alone in Boston from the waste of the usual course of manufacture for that period. It could be furnished at a dollar a gallon.

The chemistry of the article has not been described. It has been named by the discoverers kerosolene or keroform, possibly under the impression that it may be a new organic radical. Whether this has been definitely determined by analysis is not known. From its mode of production, specific gravity, physical and physiological properties, one would fain class it as an ether or an analogous hydrocarbon. Kerosolene is a beautiful colourless and volatile liquid, with a specific gravity of 634 (roughly determined). Ether has a specific gravity of about 750, chloroform 1·49. Tested with litmus paper it was found neutral. As regards the appearance to the sight, it cannot be distinguished from ether. The odour is not peculiar and hardly perceptible, and what is perceptible is very pleasant, resembling that of chloroform. It leaves no persistent smell in the apartment where it is evaporated. In this respect it is very much superior to ether, and is not so likely to produce sickness as chloroform. It is tasteless. It evaporates wholly on exposure. A given quantity of ether and kerosolene was evaporated in capsules floating in water at a temperature of 108° Fahr. The ether disappeared first. It is highly inflammable. Besides the odour just mentioned, there is a faint smell, like kerosene oil. It seems as if the specimens examined were not chemically pure, but contaminated with a small quantity of the kerosene oil. This suspicion is confirmed by agitating the kerosolene with twice its bulk of water. The phenomena witnessed are the same as are seen when ether is similarly treated, only that the kerosolene forms

larger and more persistent balls, and the water is much more and longer turbid. A portion allowed to stand twelve hours after agitation with the water presented a distinct layer of oily matter, between the upper surface of the water and the lower surface of the kerosolene. Ether furnished a similar one, but not so distinct and voluminous.

The vapour applied to the skin, as is sometimes done with chloroform in neuralgia, is irritating, but not to the same degree as that of the latter. The first intimation that this substance had anæsthetic properties was declared by the fact that an Irishman, sent in to clean out a still, became totally insensible. Upon being withdrawn, and recovering his faculties, he expressed himself as having had a very fine "dhrame." The article was thus suspected: a quantity of it was procured, and given to mice and flies. One mouse was killed by it. Mr. W. B. Merrill, an *attaché* of the works (Downer Kerosene-Oil Co., Boston), then introduced it to the notice of Dr. H. J. Bowditch, who in turn called the attention of the Boston Society of Medical Improvement to it. This body appointed a commission to examine into its claims. In prosecuting their inquiries, Dr. H. J. Biglow was probably the first to try it upon the human subject, and that subject was himself. He also exhibited it to some patients. An account of his experiments was published in the 'Boston Medical and Surgical Journal.'

The writer has experimented upon himself and others. In his own case it was given to me by Mr. S. W. Abbott. He remained under its influence full half an hour twice. Perhaps four ounces of the kerosolene were consumed in each trial. The first impression is sudden, powerful, and pleasant. Almost immediately the author passed into a state of pleasurable insensibility, which at no time was perfect. At most there would be responses to the pricks of a pin, and the muscles were not quiet—although afterwards there was no recollection of any such thing. The pulse and respiration were not much altered from their normal rate, the face was rather pale. At the first trial Mr. Abbott states that the author travelled about and grasped the napkin on which the kerosolene was found with his teeth, so strongly that he could hardly get it away. The stimulus of the vapour penetrated the whole frame, even to the tips of the fingers. No unpleasant effects have been experienced from the two experimentations, except a slight headache, which *may* be due to the presence of the adventitious kerosene.

As you breathe the vapour, you seem to float away into a wavy maze, with a sense of complete loneliness. There appears to be but one object in the universe, and that object is yourself. On recovery, the first thing seen is deemed the next only existence in the universe. It takes some little time to regain all the faculties.

At the meeting at which the above was read, quantities of the kerosolene were distributed, and several of the gentlemen of the society before mentioned inhaled it in the presence of the assembled company. They came under its influence immediately, and also recovered from it well. Dr. Ingalls reported two trials of its external use in cases of neuralgia, in one of which it succeeded. The mode of procedure is to moisten a pledget of cotton-wool with the kerosolene, lay it upon the skin, and cover it with a watch crystal.

From the above trials it is proper to infer that kerosolene is a very fit

article for further experiment. It must be presumed to be almost safe, as in all the trials of it upon man and the lower animals, only a mouse has been killed. Its price, odour, and instantaneousness of action are advantages over ether.

On the Action of Alcohol.

By Dr. EDWARD SMITH. ('Journ. of the Soc. of Arts,' Jan. 18th, 1862.)

In this paper, among other points well worthy of attention, it is shown—

That the class of alcohols is a heterogeneous one, both in its composition and action.

That alcohol is only one important element of the class.

That the aromas of wines and spirits have a decided action, and constitute an essential part of the value of those substances.

That the gluten and sugar of beers are valuable agents in promoting the assimilation of food; and in proportion as wines contain the same elements they have a similar action.

Hence, there are three actions due to alcohols (apart from any questions of their use as foods), viz., the general stimulating and disturbing one of alcohol, the conservative one of the aromas, and the digestive one of gluten and sugar.

Alcohol is not a true food, and it neither warms nor sustains the body by the elements of which it is composed.

It lessens the dispersion of heat by lessening the action of the skin, and it increases the action of the heart.

When it lessens the excretion of carbon or nitrogen, it does so by disturbing the assimilative process, and thus, instead of saving, it starves the system.

Alcohol, although it is not a food, is a medicine, since it varies the intensity of the processes of the system, without being itself transformed and converted to the purposes of the body.

On the uses of Tea in the healthy system.

By Dr. EDWARD SMITH. ('Journ. of the Soc. of Arts,' Feb. 15th, 1862.)

That this paper is of no ordinary interest will appear from the following quotations. Dr. Smith has just been saying that tea increases the respiratory changes in a marked and uniform degree. He then proceeds:

"I have elsewhere shown that the increase in the carbonic acid evolved under the influence of tea could not have been obtained from the tea itself, for, independently of the rapidity of the effect, the quantity of carbon evolved was much greater than was contained in the tea. Hence the very important deduction follows, that tea has the power to *increase the transformation of other food, and particularly of fatty and farinaceous food*. This is probably due to the gluten which the tea contains, and which acts as a ferment.

"Another kind of action, of great importance, is that which tea exerts in *increasing the function of the skin*, as is seen by the perspiration which often follows its use. This is the explanation of the fact which is taught

by the Chinese when they say that 'tea is of a cooling nature' and may be freely drank under a burning sun, a statement with which popular experience in this climate fully agrees, and it is due to a physical effect which may be thus explained:—When a fluid is converted into vapour it absorbs, during that conversion, 1000 times as much heat as it required when in its fluid state, and as this heat is rendered latent, and is essential to the constitution of the vapour, it must be abstracted from the surrounding objects and thus reduce their temperature. The action of the skin is chiefly that of regulating the temperature of the body, partly by the direct radiation of heat, but chiefly by this process of evaporation, and the rapidity with which the latter is carried on, measures the sensation of cold which will attend the abstraction of heat from the surface of the body. In this point of view the skin is the most important organ in the body, for as it regulates the heat of the body, so it must regulate the activity of all the internal organs which produce the heat and control the necessity for food, or fuel for the fire. The uniform action of tea, when it agrees with us, is to increase the rapidity of evaporation, and in hot weather, and when taken with hot water, the perspiration is oftentimes very profuse, and the subsequent cooling proportionately rapid.

"This valuable property of tea is perhaps instinctively modified by various nations, according to the wants of the consumers, those wants varying with temperature and also with the amount and kind of food which is attainable by them. Thus, the Chinese inform us that 'the country people,' viz., those exposed to great temperature, but without abundant food, 'before drinking it, add ginger and salt to counteract this cooling property;' whilst the Russians, living in great cold, add an acid, as lemon-juice, and in this country we add cream. The mode of action of all these additions is the same, viz., their tendency to restrain the action of the skin, and thereby to counteract this special effect of tea. It is known that the opulent Chinese drink a plain and weak infusion by sips in the circumstances in which they are placed, and this can be well defended by the experiments now recorded; but it has not been hitherto known why we, inhabiting a different climate, add milk or cream to our tea with the same effect. If any one will notice the effect of a basin of milk when taken alone, he will find that the hands and the exposed parts of the skin become hot and dry, and will at once appreciate the fact that the addition of milk or fat to tea has the effect just mentioned—that of preventing the increase of perspiration and thereby the cooling of the body.

"I do not know of any evidence to show that alkalies are ever added to tea with an intelligent view to the opposite state—that in which the action of the tea upon the skin is increased; but many are familiar with the fact that in this climate we add soda in small quantities, or use soft waters, with the ostensible desire to obtain a more coloured infusion. Professor Johnstone, in reference to this habit, offers the chemical explanation of the more ready dissolution of gluten on the addition of an alkali, but we venture to ask those who adopt this plan to ascertain if it be not rather due to some instinctive desire to cool the body, and would also put the same question to those who are not in the habit of taking milk or cream in their tea.

"As we have referred to this matter, it may be better to state that the sugar which we add to the tea tends largely to increase the action of the latter, both upon the respiration and the skin, sugar having indeed in some respects, an action very analogous to that of tea, both in nature and degree, so that the Frenchman drinks his sugar and water as the Chinese and ourselves drink tea. Hence in a cup of tea, as ordinarily drank in this country, we take three ingredients besides the hot water, two of which coincide in their action, and one which is opposed to them. This habit is not practised in China, and there are many in this country who take only two of the three ingredients, but very few who take the tea alone.

"Moreover, when ginger, acids, milk, or fats are added to the tea, there is a tendency to increase pulsation—another mode by which the action of tea is opposed, and thus the tea becomes more stimulating, but when an alkali, as carbonate of soda, is added to the tea, the soothing property of it is increased.

"Thus, on a review of the foregoing experiments, we observe that the two sets of inquiries into the action of tea are harmonious, and tea has the power to increase the amount both of carbonic acid and of urea evolved; and without occupying your attention with further detail, I may sum up the foregoing remarks by stating, that *the essential action of tea is to promote all vital actions and to increase the action of the skin.* Hence it increases the assimilation of food, both of the flesh and heat-forming kinds, and with abundance of food it must promote nutrition, whilst in the absence of sufficient food it increases the waste of the body.

"Having thus arrived at the knowledge of the true action of this substance, we are prepared to endeavour to ascertain the states of body, or the external conditions in which its use is proper and improper, and whilst we think this will be an easy task, we hope to be able to show that much greater discrimination ought to be employed than has hitherto been observed.

"The basis of this part of our inquiry is clearly the relation between the waste of the system and the supply of food to meet that waste, and this idea must be ever present in the mind during the discussion, for the foregoing remarks show that as tea increases all vital action, it must increase the waste of the body, *unless there be a supply of food upon which it may first act.*

"In pursuing this subject, we must admit that tea is not applicable under the following conditions, viz.—

"1. In the absence of food, for then it must increase the waste of the body. If, however, it follow a large meal, as the dinner, the system is then replete with food, and although no food may be taken with the tea, the tea cannot be said to be taken in the absence of food.

"2. At breakfast, except there remains unused food from the supper on the previous night, or except the system be usually too full of nutritive material, as in those who dine heartily at a late hour.

"3. To the ill-fed, except there is also deficient power to transform the kind of food attainable.

"4. To those of spare habit, in whom all the vital actions are performed with much activity.

"5. To a prison or other dietary, in which it is a duty to society that the food supplied should not exceed the wants of the system.

"6. To exertion, for exertion is itself the most powerful exciter of waste.

"7. To low temperatures, except in connection with abundant food and clothing, and with the addition of milk, fat, acid, or ginger.

"8. To those who habitually perspire too freely, unless (as is then seldom the case) there be an excessive supply of food.

"9. To those cases in hot climates where the appetite is defective and the skin active.

"10. To the young, in whom there is naturally the maximum amount of vital action.

"11. With our principal meals, or those at which we take the greater part of our animal food, for after such meals a dry and hot skin, that is, lessened action of the skin, is a natural effect, and this would be opposed by the tea. It is worthy of note that neither the Chinese, nor any other nation, usually take tea under this last condition.

"Such are some of the conditions in which tea should be withheld, and in reference to most of them the results of science correspond with actual practice. It is not usual to give tea to children, or with animal food, as at dinner, or at breakfast, or in prisons, and we seek a stronger beverage in hot weather and during exertion; but it is universally taken in the afternoon and evening, and after dinner, when the vital actions are declining and there is felt to be excess of food in the system. It is not taken alone as a meal, or with the idea of taking nourishment. Yet with all this instinctive propriety, the cautions now given are not universally adopted, and in such instances as in those who perspire freely, and those of spare habit, much ignorance prevails, to their own detriment.

"The subject of low temperatures and exertion raises that of the fitness of tea to supplant spirituous liquors in the dietary of our sailors when residing in the Arctic regions, and has given rise to much difference of opinion. In a recent work on Arctic voyages, it is affirmed that after the first year's residence the appetite for food changed, so that large quantities of fat were consumed, and tea was found to be highly acceptable and beneficial. The explanation of this last fact appears upon the face of the statement, for it was the excessive quantity of fat which, by its action in lessening the activity of the skin, as well as by the necessity for its own transformation, rendered the action of tea desirable. Dr. Kane, in his interesting work, states that his crew were pledged to the avoidance of spirituous liquors, but in one period of exposure and fatigue of great danger, he gave them brandy; at another period, when great labour was temporarily required in great cold, he gave them hot coffee; and in their ordinary dietary he authorised tea, but he does not give any grounds for this variation. We are informed by an Arctic navigator of great experience and high position, Sir James Ross, K.C.B., F.R.S., that this large increase in the consumption of fat in the Arctic region is not necessary, provided the quantity habitually supplied to sailors is duly eaten; and it is quite clear that in the absence of an unusual quantity of salt or fat, or some other substance which tends to lessen the evaporation from the skin, the use of tea is not especially indicated. The problem is one of a mixed nature, each part of which must be investigated before a truthful conclusion can be arrived at.

"That sailors can do their work better with tea than with other beverages cannot be, as already proved, because it supplies nourishment, but because it causes the avoidance of a disturbing and therefore evil habit, or promotes the digestion of food, as will be shortly pointed out.

"We may now briefly look at the opposite view of the question, and point out the states in which the use of tea is clearly beneficial. These are—

"1. Some time after a full meal, when the system is oppressed by food, or by the heat produced in its conversion.

"2. In the after-part of the day, when the body is full of partly digested food, and when the activity of the transforming function is considerably lessened.

"3. For the corpulent.

"4. For some of those in whom the vital actions proceed slowly, and in whom the power of transforming food is greatly lessened.

"5. For the old, with their deficient vital actions.

"6. For hot climates, and especially to those who, living there, eat freely, and drink milk or alcohols.

"7. In cases of suspended animation, as from drowning, where the object is to restore the respiratory functions—an object more likely to be assisted by hot tea than by brandy.

"8. For those who eat much starchy (bread, rice, &c.) and fat food, and especially if they do not take flesh. This is due to the fact that our experiments have proved that tea clearly promotes the transformation of starch and probably also of fat—in the former case by means of its gluten, which doubtless acts as a ferment in reference to the starch.

"9. For soldiers, who in time of peace take too much food in relation to the waste proceeding in the body.

"10. For soldiers and others marching in the heat of eastern climates, for then, by promoting evaporation and cooling the body, it prevents in a degree the effect of too much food and of too great heat. For this purpose a cold infusion may be used (as a hot infusion could not be obtained); of this a quantity equal to twenty-five grains of tea should be taken often during exposure. We urge this upon the consideration of our military authorities, in the conviction of its great value in preventing the occurrence of sun-stroke and of other diseased states of system due to excess of heat, and have entered into the subject more in detail in a short paper published in the 'Medical Times and Gazette' for 1860.

"11. For the sedentary, who require increased vital action.

"12. For those who have usually a dry and non-perspiring skin.

"All these conditions resolve themselves into this general law, that tea is beneficial in all conditions in which there is temporary excess of food regarded in relation to the necessity of the system for it and the power to transform it."

On the Action and Uses of Podophyllin.

By Dr. ——. ('Lancet,' February 22nd, and March 15th, 1862.)

The *Podophyllum peltatum*, May-apple, or mandrake (which latter name it shares in common with other quite different plants), belongs to

the natural order *Ranunculaceæ*. It is found in great abundance in all the northern states of America, from New England to Georgia, propagating itself rapidly by its roots; so that it presents two favorable conditions—cheapness and unmistakeableness. Its fruit is subacid, and agreeable to some persons, and is eaten with impunity under the name of wild lemons. The leaves are said to be poisonous and narcotic, but their properties do not appear to have been investigated. The fact that the root of this plant possessed powerful medicinal properties was long known; forty years ago, Dr. Jacob Bigelow stated that it was "a sure and active cathartic, answering the purposes of jalap, aloes, and rhubarb, but more safe and mild in its operation in doses of twenty grains, given in the state of a fine powder." Dr. Kidd, of Cincinnati, stated that the fresh root was an irritant poison; but that, by drying and keeping, its violent action was much moderated, although in doses of thirty to sixty grains it was a violent cathartic and emetic. In moderate doses, it was a cathartic similar to jalap, but acting more slowly; in small and repeated doses it had a powerful deobstruent action, and was peculiarly useful, in chronic hepatitis, scrofula, syphilis, rheumatism, and other chronic diseases. With all these virtues, however, the crude drug never came into extensive use, in consequence of the presence of an acrid principle which produced uneasy sensations in the throat, frequently nausea and vomiting, with great and distressing depression.

The substance *Podophyllin*, however, appears to possess all the valuable qualities of Podophyllum, while it is free from its unpleasant effects. The name, unfortunately, has been given to two different things: one, the pure resin extracted from the root, and which does not appear to possess any special virtues; the other, the podophyllin of commerce, which is a concentrated preparation of the crude drug, and appears to be a complete substance. Podophyllin has been used very extensively in America since the year 1847, and is believed to possess all the advantages of mercury, without producing any of its disagreeable effects. It is regarded as almost a specific in diseases of the liver, as useful in all forms of fever, but especially in puerperal fever, as capable of relieving congestions of the brain, of acting as a powerful alterative, and as curing rheumatism, croup, habitual constipation, amenorrhœa; and in minute and long-continued doses, many skin-diseases, and even syphilis and scrofula. Its use should be avoided in inflammatory states of the bowels. No doubt, the good effects have been exaggerated; still the mass of evidence in its favour is too great to be lightly set aside. In this country, Podophyllin has of late been pretty largely used, and the 'Lancet' contains testimony in its favour from three physicians. From their statements it would appear that it acts specially on the liver, and in this respect is more energetic than mercury or any other cholagogue. The purgative effect is slowly produced, being seldom manifested till ten or twelve, or even sixteen or twenty hours after it has been swallowed; sometimes its action is unattended with uneasiness, but generally there is a sensation of tormina or twisting and spasmodic action in the upper region of the abdomen and about the navel.

The doses of Podophyllin are from one to three grains as a cholagogue and cathartic; half a grain to one grain as a moderate purgative; one fourth of a grain to half a grain as an aperient; a sixth to a quarter of

a grain, three times a day, as an alterative. A warm infusion of ginger is said to be the best means of relieving tormina and griping when caused by its use. In cases of amenorrhœa with constipation, when given in doses of a quarter of a grain twice a day, it is stated by Dr. Ansell, to act as a powerful cholagogue, cathartic, and emmenagogue. Dr. Ramskill, to obviate the tendency to produce griping, prescribes it in the form of a pill composed of equal parts of Podophyllin and Indian hemp. Hyoscyamus or conium may be combined with it for the same purpose, but are apparently not so effectual.

On a simple and efficient method of performing Artificial Respiration. By Dr. MARCET, Assistant-Physician to the Westminster Hospital, &c. ('Proceedings of the Royal Medical and Chirurgical Society,' February 4th, 1862.)

Seven or eight years ago, Dr. Marcet published in one of the weekly journals an account of an instrument for performing artificial respiration. He now describes a new instrument, which acts on the same principle as that invented by Dr. Sibson. It has the form of a bellows. Its shape is that of a cylinder, although any other would be equally eligible. It must be capable of containing thirty or forty cubic inches of air. On the inferior plate of the bellows, in addition to the leather valve of a common fire-bellows, is a round aperture, exactly closed by a little brass cone. This cone forms part of a brass rod, which projects to a given extent in and out of the bellows. The cone is forced into the aperture, and kept *in situ* by means of a small coil spring, which is disposed in such a way that when the operator presses on the end of the rod which is inside the bellows, the aperture is opened. On releasing the pressure, the little cone returns to its former position, and closes the hole. The method of using this instrument requires but little explanation. After the air has been driven out of the bellows into the lungs, a slight pressure on the upper plate is required to depress the conical valve, and establish thereby through the instrument a communication between the lungs and the external air, when, of course, the thorax will contract by its own elasticity, and the expiration take place. On expanding the bellows, it is filled with fresh air to be used for the next inspiration. The present instrument differs, therefore, from that of Dr. Sibson, inasmuch as instead of a syringe and tap, or valve which is opened with the fingers after each successive inflation of the lungs, the author has adapted a bellows and the conical valve described above, which is opened by the very motion required to blow out the air contained in the bellows, and shuts of its own accord on discontinuing the pressure.

This instrument has the advantage of great simplicity in its construction. It is cheap, light, and portable; its application requires no practice or experience; only a little attention will be wanted to allow the expiration by pressing on the upper surface or plate of the bellows after each inspiration.

Having found a good method for inflating the lungs, Dr. Marcet endeavoured to discover a means of connecting this instrument with the larynx or trachea by some process calculated to ensure the passage of

air from the bellows into the lungs, without any being lost by its escaping upwards. In order to solve this difficulty, it was necessary to devise a canula so constructed that when introduced through the mouth into the larynx, it pressed on its sides with a sufficient degree of force to prevent air under pressure from finding its way between the instrument and the mucous membrane of the windpipe. The following contrivance answered perfectly this condition, and was executed under the author's directions, by Messrs. Whicker and Blaise, of St. James's Street.

A tube or canula of German silver, plated, about thirteen inches in length, and five sixteenths of an inch in diameter, is bent into a shape not unlike that of a catheter. This tube is grooved transversely at its bent extremity, and a piece of sheet caoutchouc is very tightly fastened round the margins of this groove by means of a fine silver wire. A second tube, of a very small diameter, likewise of German silver, and nearly of the same length as the other, is soldered to it, on its concave side, and opens into the minute chamber existing between the sheet caoutchouc and the metal. At its free extremity the small tube turns off from the main pipe or canula, and its orifice is ground so as to admit the nozzle of a small india-rubber bottle, similar to those used as syringes; the small tube is, moreover, supplied near its free end with a stopcock. The main pipe has also a stopcock near its straight end, which is constructed in such a way as to establish at will a communication between the lungs and the bellows, or between the lungs and the open air, so that as soon as natural respiration appears to be returning, air may be admitted into the lungs without disconnecting the apparatus. It is advisable to have in readiness two or three canulæ of different sizes.

The extremity of this canula is to be introduced into the larynx, and the sheet caoutchouc at once expanded by applying the india-rubber bottle to the end of the narrow tube, and compressing it with the hand. By closing the stopcock, the sheet caoutchouc remains permanently dilated, forming a round ball, which fills up perfectly the diameter of that part of the windpipe into which it has been introduced, acting as a soft cushion, which prevents the contact of the hard metal end of the canula with the delicate lining of the larynx; at the same time, the communication between the lungs and the external air remains open through the canula. This instrument is so effectually secured in the larynx as to admit of a certain amount of traction without being displaced, which is an important element for the successful performance of artificial respiration by the method in question.

In a case of suspended animation where artificial respiration alone was capable of saving life, the first thing to be done would be to adopt some ready method until the canula and bellows the author had described could be applied. It was advisable to begin with the ready method in order to lose no time, and keep up the spark of life until it might be kindled by appropriate means. The canula should be introduced into the larynx as rapidly as possible. The author could not presume to give advice as to the best method of inserting a tube into the larynx through the mouth and glottis during life, but when experimenting on the dead body he had acted as follows: The shoulders and neck were slightly raised, the head being allowed to fall backwards; next, the larynx was pushed backwards

against the spine, the tongue drawn forwards, and the canula introduced into the mouth with its concave side downwards; the end of the instrument was pushed forwards in the median line of the tongue, being kept in contact with this organ, when it found its way through the glottis into the larynx. On inflating the sheet caoutchouc, now within the larynx, the canula would be found to resist a slight effort made to withdraw it; should it, on the contrary, give way, this would show that the end of the canula was in the œsophagus, and not in the larynx.

The author believed that this method, which he had practised also on living dogs, might be available for introducing the tube into the human larynx during life; probably, however, the *modus operandi* recommended by Dr. Sibson to introduce a tube into the larynx might be preferable. This gentleman, instead of carrying the point of the instrument along the upper surface of the tongue, pushed it backwards, keeping it in contact with the posterior wall of the pharynx; by this means the epiglottis was avoided, which must by the other method interfere with the free entrance of a tube into the windpipe.

The laryngeal tube is fixed in the windpipe by expanding the sheet caoutchouc with the elastic india-rubber bag, and closing the stopcock on the narrow pipe. The bellows should be at once connected with the canula by means of a piece of caoutchouc tube, about eighteen inches long. Artificial respiration is now commenced by distending the bellows more or less, according to the amount of air required, and then compressing it, when the air it contains is introduced into the lungs. As soon as an obstacle is felt to the further compression of the bellows, the inspiration is at an end, and, by making a slight effort to overcome this obstacle, the lungs will be allowed to empty themselves, much in the same way as they would during natural respiration. The expiration may be assisted by external pressure on the chest. This operation can be continued for any length of time.

In order to test the efficiency of the present method of performing artificial respiration, Dr. Marcet gave an overdose of chloroform to a dog, and when respiration had quite ceased, he succeeded perfectly in restoring animation with the instrument described above; indeed, animation was suspended twice in the course of a few minutes, and restored twice without the slightest difficulty. The subject of this experiment was none the worse for the operation.

Finally, the author remarked, that the laryngeal tube is equally applicable whatever be the instrument used for inflating the lungs; and, moreover, that it will prove of great utility for all experimental inquiries connected with suspended animation where artificial respiration is resorted to. It will save putting animals to a great deal of pain by doing away with the necessity of performing tracheotomy. (The price of the bellows and canula is about £2.)

At the conclusion of the meeting, Dr. Marcet exhibited the action of his bellows and canula by securing the latter in a human larynx excised from a body, connecting the bellows with the canula, and inflating a caoutchouc ball, the inside of which communicated with the trachea by means of a short glass tube, secured in the trachea with a cork. Although a strong pressure was required to dilate the caoutchouc, not the slightest escape of air took place between the canula and the larynx, the ball

expanding and then contracting by its own elasticity, imitating thereby the motions of the lungs during respiration.

Further Researches on the Therapeutic Properties of the Peroxide of Hydrogen. By Dr. B. W. RICHARDSON. ('British Med. Journal,' March 22nd, 1862.)

The author first draws attention to the subject of the manufacture of the peroxide, and says that after repeated and long-continued experiments in reference to the different processes for making the solution, his opinion being that no plan is so good as the original one invented by Thénard, in which peroxide of barium is used as the agent for supplying the oxygen, with hydrochloric acid as the displacing body. A solution charged with ten volumes of oxygen is the best and most applicable: the dose of this solution for an adult is from one drachm to half an ounce in a liberal quantity of water. As a general rule, the solution should be given separately; or, if admixed with another remedy, should be so admixed at the period of administration.

Dr. Richardson has used the remedy now in 223 instances; viz., in simple diabetes, 3 cases; in diabetes complicated with phthisis, 2 cases; in chronic rheumatism, 1 case; in subacute rheumatism (the continuation of an acute attack), 2 cases; in mitral disease, with great pulmonary congestion, 4 cases; in irregularity of the heart with cardiac apnœa, 3 cases; in struma, with enlargement of cervical glands, 2 cases; in struma, with formation of purulent matter constantly recurring, 1 case; in mesenteric disease, 1 case; in simple jaundice, 1 case; in jaundice, complicated with cardiac and hepatic disease and ascites, 1 case; in cancer affecting glands of neck, 1 case; in pertussis, 9 cases; in chronic bronchitis, 9 cases; in bronchitis, complicated with mesenteric disease, 1 case; in chronic laryngitis, 3 cases; in anæmia, 44 cases; in phthisis, first stage, 66 cases; in phthisis, second stage, 31 cases; in phthisis, third stage, 13 cases; in phthisis, first stage, complicated with bronchial disease, 6 cases; in phthisis, second stage, with bronchial disease, 3 cases; in phthisis, with valvular disease of the heart, 2 cases; and also in a few cases of dyspepsia.

Analysing these cases, the author comes to the following conclusions. In the treatment of diabetes, the peroxide, while it reduced the specific gravity of the renal secretion, increased the quantity, so that its value in the disease is inappreciable. In chronic and subacute rheumatism, it is of great value. In valvular disease of the heart, attended with pulmonary congestion, it largely relieves the attendant apnœa. In struma, it removes glandular swellings like iodine. In mesenteric disease, it improves the digestion, and favours the tolerance of cod-liver oil and iron. In jaundice, it exercises an excellent effect by improving the digestion and causing a free secretion. In cancer, it seems to exert no influence. In pertussis, its value is very remarkable; it cuts short the paroxysms, and removes the disorder altogether more quickly than any other remedy, except change of air. In old-standing bronchitis, during attacks of suffocative dyspnœa, it affords rapid relief. In chronic laryngitis, its caustic character renders its administration painful. In

anæmia, while it exerts no specific influence *per se*, yet, combined with iron, it increases the activity of that drug. In phthisis pulmonalis, in the first stage, it greatly improves digestion, and increases the activity of iron; while, in the last stage, it affords an unquestionable relief to the breathlessness and oppression, acting in fact like an opiate without narcotism. After describing the use of the peroxide in dyspepsia and epilepsy, the author dwells finally on the anomalous symptoms excited by the solution; pointing out the singular fact that in some instances where it had been pushed freely, it had produced profuse salivation. That chlorine and iodine had in these effects an analogy to salts of mercury, is a fact long recognised; but the fact that oxygen in the active state excited the same physiological action, is a fact as remarkable as it is interesting. It suggested the possibility that the salts of mercury did not act by virtue of the mercury at all, but by the agency of the oxygen, chlorine, or iodine, which they conveyed into the organism. It suggests also the propriety of ascertaining whether chlorine or peroxide of hydrogen might not replace mercury in cases where it was supposed to be a specific. If this suggestion were carried out, and an affirmative answer supplied, the method of cure in the disorders specified would be rendered much more simple and rational.

On the Inefficiency of Henbane as usually prescribed. By Mr. Donovan. ('Dublin Medical Press;' and 'British Medical Journal,' April 12th, 1862.)

"The henbane plant," Mr. Donovan writes, "is believed to be highly poisonous in all its parts. Timidity in its use among medical practitioners has caused this narcotic to be administered in doses which could have very little, if any, effect. I have known the tincture prescribed in as many drops as would be given of laudanum, and because the patient chanced to sleep, the dose was deemed sufficient. Bolder practitioners have given a drachm, and others have ventured on two drachms. Never having been able to learn, from reliable authority, that any of these doses had been followed by unmistakeable effects, I made some experiments, first on myself, and then on others who volunteered their chances. Having prepared some tincture according to the precept of the Dublin Pharmacopœia, I commenced with taking one drachm. No effect followed. In a month after I took two drachms without any effect. In another month I took half an ounce, and as before without any result. In some weeks after, being troubled with a cough, I took six drachms, supposing that if the plant had any narcotic power this would be a good opportunity for testing it; there was not the slightest effect. I subsequently swallowed an ounce at one dose without observing the manifestation of any power. My apprentices at different times satisfied themselves as to the incapability of five- or six-drachm doses of this tincture. I had repeatedly tried one-drachm doses, repeated at intervals of two or three hours, on persons variously affected, but could not discover any consequences. All the tinctures used in these experiments had been made with henbane cultivated in gardens. It occurred to me that perhaps the plant is rendered powerless by cultivation, and I determined to make trials of it in the wild

state. I received a supply of wild henbane collected in a mountainous district of North Wales, and sent to me the day after it was gathered. The herb being divided into equal parts, one part was immediately and carefully dried, powdered, and made into a tincture of the strength indicated by the Dublin Pharmacopœia, the larger stalks having been removed. The same trials were made with this tincture as with the former; at distant intervals I increased my own dose, drachm by drachm, until it amounted to an ounce. Another person took seven drachms at once, and would have gone further had there been any use in so doing. In none of these experiments was any effect observable. As an opinion has sometimes been entertained that medicinal plants, in their recent state, possess more energy than those which have been dried, I made a tincture of the portion of the Welsh henbane which had not been dried. The tincture was made on the day on which the plants arrived. After digestion for three months, the tincture was tested by similar trials as with the former on two persons; an ounce mixed with water was swallowed by each, but there was not the slightest manifestation of medicinal power. With regard to the extract of henbane, I can only say that a few years since an apprentice of mine swallowed ten grains of it at one dose without perceiving any consequences. The extract was London made, and the plant the growth of Mitcham. The main object of these observations is not to prove that henbane is, under all circumstances, altogether worthless, but to show that prescribers in this country are over-cautious in its administration. The fact that the energetic poison called hyoscyamia is obtained from this plant proves that, at least in some countries, caution is required; but I am not aware that this alkaline principle is procurable from henbane of the British Isles, unless, perhaps, in infinitesimal quantities.

On the employment of Magnesia to assure the assimilation of Cod-liver Oil. By M. DANNECY, of Bordeaux. ('Bul. Gén. de Thérap.,' Dec., 1861; and 'Edin. Med. Journal,' April, 1862.)

Amongst the numerous individuals who make use of cod-liver oil, many complain of not being able to retain it, and of being obliged to reject it some hours afterwards, even when they had taken it at the beginning of their meals—a singular thing being that they only vomit it when the digestion of the food is finished. Consulted frequently under these circumstances, and by persons to whom, in other respects, the use of the oil caused no repugnance, M. Dannecy advised them to swallow after the oil eight or ten grains of calcined magnesia, mixed up with a little water. The success of this plan has been complete. In order to assure himself if the effect was due to the magnesia, he directed its employment to be discontinued. Immediately the vomitings reappeared, to disappear again under the influence of the magnesia. M. Dannecy was led to the employment of this substance by the recollection of the curious and interesting experiments of Dr. Jeannel on the reduction to the state of emulsion of fatty bodies by means of alkalies, and by the theory which he proposed of their assimilation.

A new Hæmostatic—the Pungawar-Djamie (Pulea Cobelii.)
By Dr. E. H. Jacobs. ("New York Med. Times," Dec. 21st, 1861.)

This new hæmostatic is derived from the stipes of a fern of Java, and consists of very soft, delicate filaments, flexible, and so light as to float in the air for a long time. They vary in colour according to their thickness, from a golden, light brown, to a dark gray or blackish. It is said that six grains form a mass sufficient to arrest bleeding from an artery one line in diameter. It absorbs water so readily as to sink in about half a minute. When subjected to heat, it yields an empyreumatic odour, and detonates under combustion. Its styptic effects are supposed to depend upon its capillary attraction overcoming the force by which the water in the blood is held in combination, the immediate consequence of which is the coagulation of the remaining portion of the blood, by which, together with the elasticity of the filaments, now enlarged by the absorption of fluid, a firm adhesion of the coagulum to the surface of the wound takes place, causing a firm closure of the mouths of the bleeding vessels. The advantages claimed for it over other styptics are, that the effect is quicker, that it produces a coagulum where other agents have failed—as in carcinomatous or scorbutic ulcers, and that it does not retard the healing process. When used, it should be crumbled and a sufficient quantity (five grains to a scruple) pressed for a few minutes directly on the bleeding surface, afterwards applying a suitable compress. By this means it is made to penetrate into the finest apertures on the surface of the wound, causing instant coagulation of the blood oozing from the smaller vessels, and said to be reliable in all cases where the divided artery does not exceed a line and a half in diameter. Whether experience will substantiate what authors have told us concerning this much extolled styptic remains with us to be seen.

On the Veratrum Viride as an Arterial Sedative.
By Dr. Ephraim Cutter. (Pamphlet, Woburn, Massachusetts, 1862.)

The Veratrum Viride belongs to the natural order Melanthaceæ. It is indigenous in the United States of North America. It is not the Veratrum Album nor Veratrum Nigrum, although it is closely allied to them. It has long been used in domestic and regular practice in America, but its late extensive employment in the United States dates back to 1850, when Dr. Wesley C. Norwood, of Cokesbury, S. C., called attention to its remarkable properties as an arterial sedative. To Dr. Norwood is due the credit of first introducing the remedy as now understood.

The writer, his father, the Middlesex (Mass.) East District and the Massachusetts Medical Societies, in America, have tested it also by a tincture made by a committee of three (the writer, chairman, Dr. F. Richard, of Woburn, and Dr. William Juggal, of Winchester), from roots collected, dried, and ground by themselves. The results of their labours may be found in the 'American Journal of Medical Science,'

Philadelphia, October, 1858, and 1861, and the present paper briefly recapitulates them.

The simple facts derived from the above and other reported experience are that the Veratrum viride is a powerful, prompt, reliable, but manageable and safe arterial sedative in the highest degree, to be employed in the treatment of all inflammatory febrile affections, whether sthenic or asthenic, of organic and functional diseases of the circulatory system, and of some complaints of the nervous system.

It is powerful. Given in health, its first effect is seen in lowering the pulse, without any other very appreciable symptom or notable interference with the other great functions of life. For instance, the writer took about eight minims of the tincture, made four ounces of the dried root to the pint (℥xvj) which was dug in July. (This is the period of full growth and the most improper time to collect it. The experiment was made for testing the relative strength as regards time of collecting.) Pulse 60. Was quietly writing in his study. In one half hour the pulse was 52. On taking more the pulse went down to 48. There was little other disturbance. The full dose is eight minims, once an hour, and the largest dose given designedly was thirty-two minims. These produce, in health or in disease, nausea and vomiting, rarely purging, coldness of surface, diuresis, diaphoresis, tingling in the extremities, inability to move the muscles, a pulse one half its normal frequency, sometimes less and sometimes more, respiration diminished in frequency, lassitude, prostration, and feeling of impending death. These powerful effects are not often to be produced, and when they seem too great they are obviated by alcoholic stimulants and opiates.

It is prompt. What has been said will bear out this statement. We ordinarily expect its effects to appear in a few hours. If they do not, increase the dose, doubling it in frequency or quantity, keeping the nausea as a guide.

It is reliable. Those who have employed it most deem it as trustworthy as any other drug. It sometimes fails, so does opium or quinine. This statement is not made upon the authority of the writer alone, but also upon the evidence of many other physicians. "Few remedies have so speedily attained such pre-eminence—not so much in books and journals as in the unwritten materia medica of the practical physician."

It is manageable and safe. Tell the nurse to stop it when nausea is felt approaching, and afterwards continue in smaller doses. It is given to persons of both sexes and all ages. Should by accident a double or even quadruple dose be given, vomiting soon supervenes and relief follows. A fluid drachm of the tincture has thus been swallowed by mistake. No well-authenticated fatal cases of poisoning has come to the knowledge of the committee. Of course it would be easy to overwhelm the pneumogastric nerve by pushing it when the full effects are produced. Alcoholic stimulants and opiates given freely are antidotes.

Compared with venesection, in place of which it is much employed, it is deemed to have the good effects of depletion without its bad results. It is considered in this light as a remedy of the highest importance.

Compared with Venesection.

Venesection diminishes—(*a*) the fulness, force, and frequency of the pulse; (*b*) has a sedative influence upon the nervous system; (*c*) directly withdraws a portion of the solid constituents of the life-current, which, at least, it takes time to make up.	*Veratrum viride* diminishes—(*a*) the fulness, force, and frequency of the pulse; (*b*) has a sedative influence upon the nervous system; (*c*) and does not reduce the nervous quantity of the vital fluid, which is the objectionable, if not injurious, feature of depletion.
Venesection cannot be persisted in without great hazard of prolonging the convalescence of the patient, if not weakening him for life.	Veratrum viride can be employed an indefinite period with safety, and stopped its effects speedily subside.

Of course in *every* case the Veratrum viride cannot entirely supersede the lancet. But in the vast majority of cases, as met with in the Middlesex East, Massachusetts, it will. Even then it is an excellent thing to maintain the impression gained by the primary depletion.

Compared with Digitalis.

Digitalis is slow, uncertain, cumulative: eminently a diuretic.	Veratrum viride is prompt, sure, and *not* cumulative, as far as it has been possible to ascertain by the societies referred to above. Less of a diuretic.

Compared with the Tartar Emetic.

Antimony directly changes the character of the blood, alters the secretions, purges in full doses, and its effects are permanent, so to speak.	Veratrum viride does not seem to change the character of the blood, alters to a less extent the secretions, rarely purges, and, suspended, its effects soon subside.

Compared with Colchicum.

Colchicum is not so certain, is more of a diuretic, purges in full doses, rarely vomits, and has been observed (Dr. Hammond) to increase the urine in quantity and specific gravity.	Veratrum viride is more sure, less of a diuretic, vomits, and has been observed to increase the urine, lowering the specific gravity.—(Abbott.)

Compared with Aconite.

Aconite is narcotic	Veratrum viride is not. In the full physiological effects the mind is clear.

Compared with Veratrum Album.

Veratrum album is a drastic purgative, judging from our experience with the alkaloid which purports to come from the V. album.	The Veratrum veride rarely purges. This statement is made from the writer's experience of about six years, and that of his associates. It acts first on the par vagum.

In order to give authorities and furnish an idea of the attention which has been paid to the subject, the following incomplete list of the literature is appended.

'Bigelow's Medical Botany,' vol. ii, p. 121; Rafinesque's 'Medical Flora,' vol. ii, p. 273; 'American Journal of Medical Sciences' (Philadelphia) Osgood, vol. xvi, p. 196; ditto, 'Committee Middlesex East District Medical Society,' No. 72, new series, p. 305; ditto, ditto, No. 84, p 394; 'American Journal of Pharmacy,' vol. vii, p. 202, vol. ix, p. 181, and vol. x, p. 89; Griffith, 'Medical Botany,' p. 643; C. A. Lee, 'Catalogue of Medical Plants,' N. Y., p. 58; Wood and Bache, 'United States Dispensatory;' Wood, 'Therapeutical Pharmacology,' vol. ii, p. 152; Dunglison, 'Therapeutics and Materia Medica,' vol. ii, p. 195, 'Transactions of American Medical Associations,' vol. ii, p. 907, vol. v, p. 890; 'Boston Medical and Surgical Journal,' E. Cutter, vol. lvi, p. 509; ditto, Abbott, an 'Inaugural Thesis on the Veratrum Viride,' published by the request of the Medical Faculty of Harvard College. 1862, April 3rd and 10th. Norwood, six articles in the 'Southern Medical and Surgical Journal,' June 1850 to January 1853, and up to 1858; four editions of a pamphlet entitled, 'The Therapeutical powers and properties of the Veratrum Viride,' &c., &c.

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